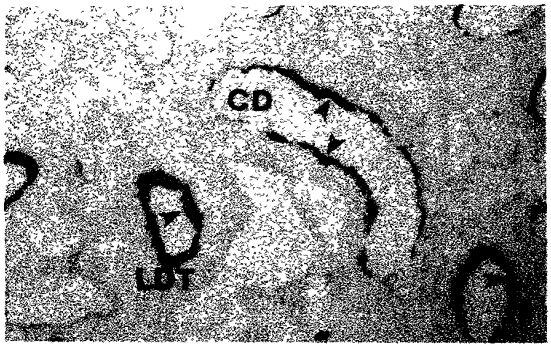

FIG.1A

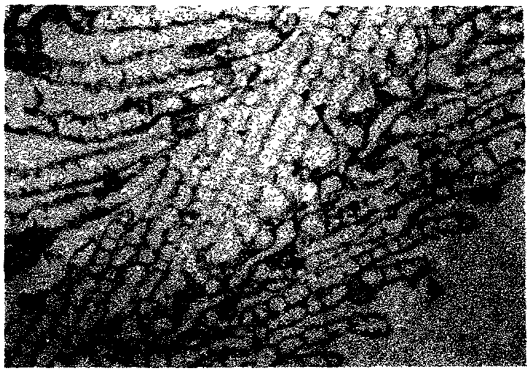

FIG.1B

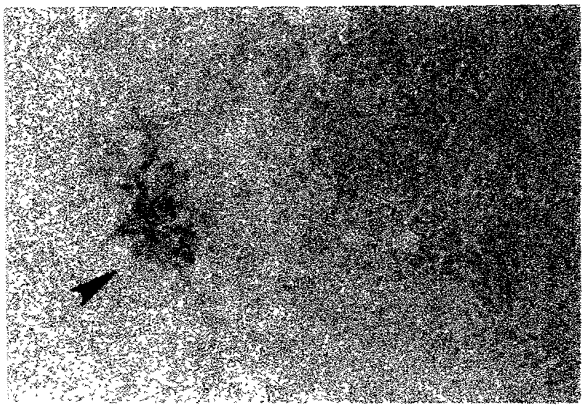

FIG.1C

FIG.1D

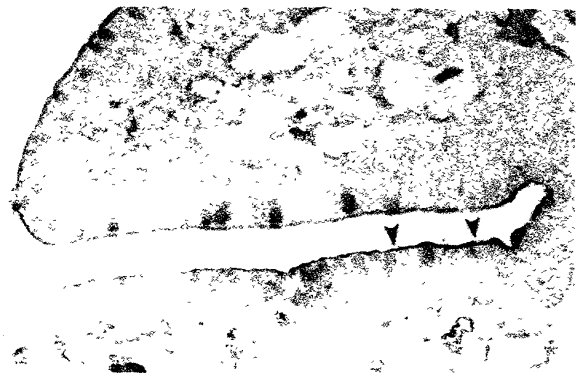

FIG.1E

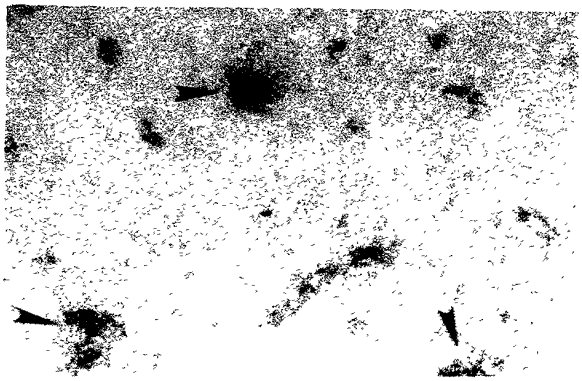

FIG.1F

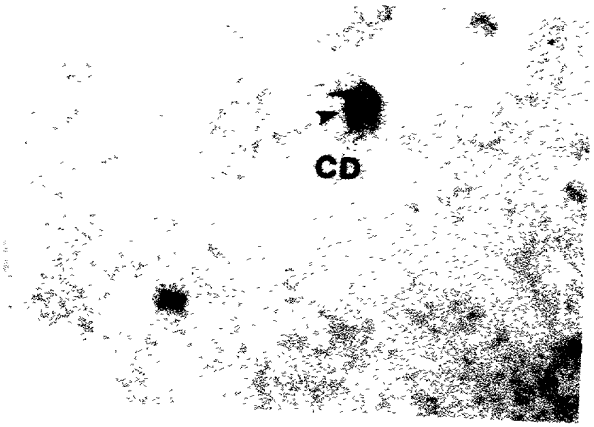

FIG.2A

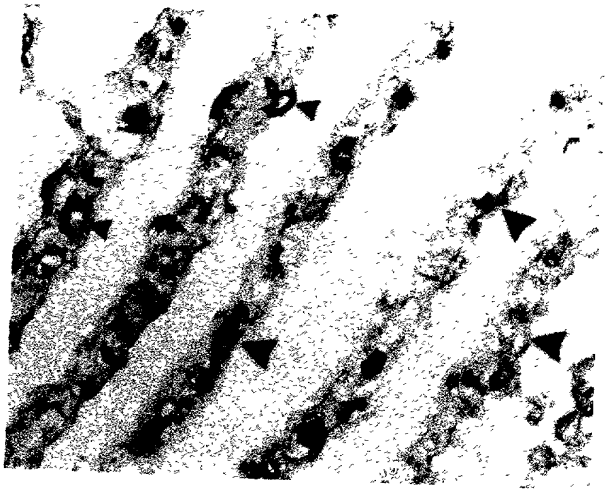

FIG.2B

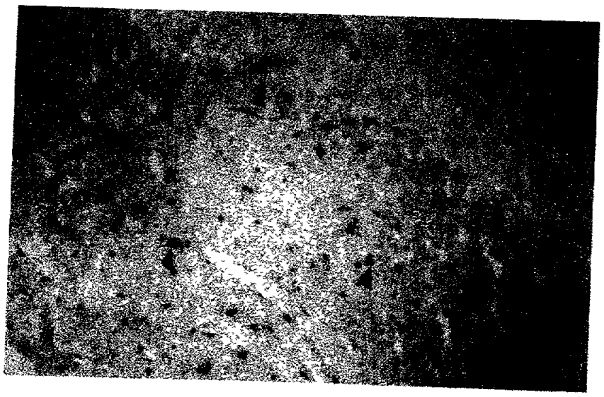

FIG.2C

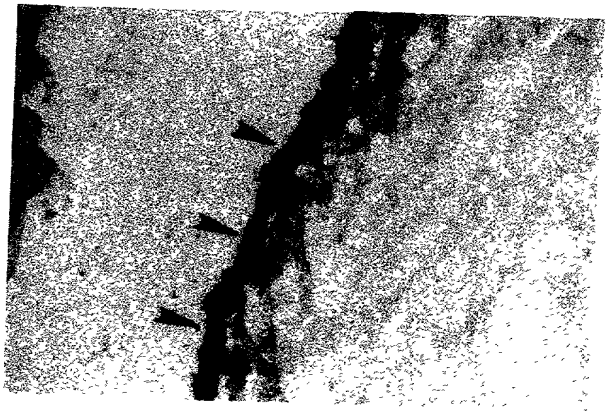

FIG.2D

FIG.2E

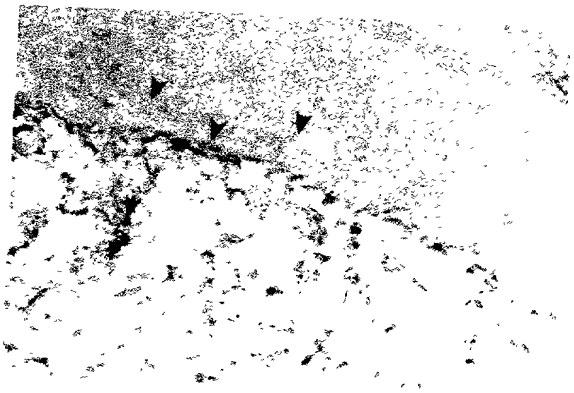

FIG.2F

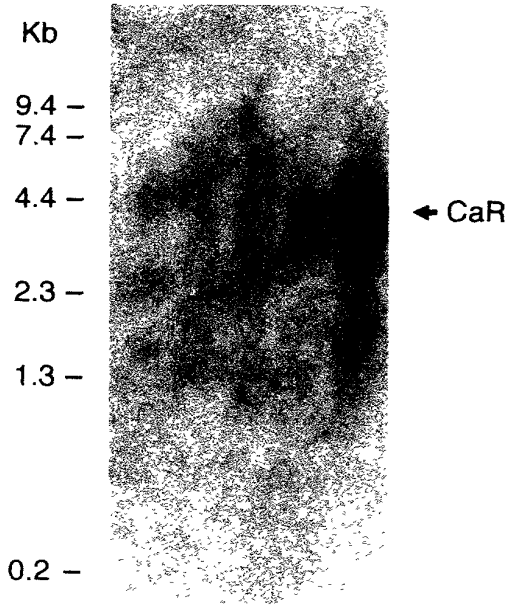

FIG.3A

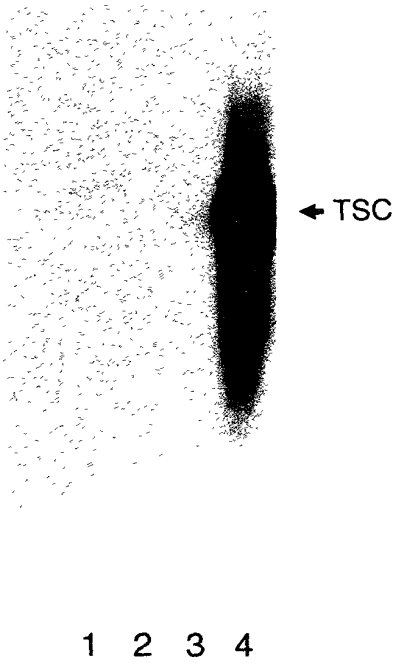

FIG.3B

```
aattccgttg ctgtcggttc agtccaagtc tcctccagtg caaaatgaga aatggtggtc 60
gccattacag gaacatgcac tacatctgtg ttaatgaaat attgtcagtt atctgaaggt 120
tattaaaatg tttctgcaag gatggcttca cgagaaatca attctgcacg ttttcccatt 180
gtcattgtat gaataactga ccaaagggat gtaacaaaat ggaacaaagc tgaggaccac 240
gttcaccctt tcttggagca tacgatcaac cctgaaggag atggaagact tgaggaggaa 300
atggggattg atcttccagg agttctgctg taaagcgatc cctcaccatt acaaagataa 360
gcagaaatcc tccaggcatc ctctgtaaac gggctggcgt agtgtggctt ggtcaaggaa 420
cagagacagg gctgcaca atg gct cag ctt cac tgc caa ctc tta ttc ttg   471
                    Met Ala Gln Leu His Cys Gln Leu Leu Phe Leu
                    1               5               10

gga ttt aca ctc cta cag tcg tac aat gtc tca ggg tat ggt cca aac   519
Gly Phe Thr Leu Leu Gln Ser Tyr Asn Val Ser Gly Tyr Gly Pro Asn
            15                  20                  25

caa agg gcc cag aag aaa gga gac atc ata ctg gga ggt ctc ttc cca   567
Gln Arg Ala Gln Lys Lys Gly Asp Ile Ile Leu Gly Gly Leu Phe Pro
        30                  35                  40

ata cac ttt gga gta gcc gcc aag gat cag gac tta aaa tcg aga ccg   615
Ile His Phe Gly Val Ala Ala Lys Asp Gln Asp Leu Lys Ser Arg Pro
    45                  50                  55

gag gcg aca aaa tgt att cgg tac aat ttt cga ggc ttc cga tgg ctc   663
Glu Ala Thr Lys Cys Ile Arg Tyr Asn Phe Arg Gly Phe Arg Trp Leu
60                  65                  70                  75

cag gcg atg ata ttc gca att gaa gag att aac aac agt atg act ttc   711
Gln Ala Met Ile Phe Ala Ile Glu Glu Ile Asn Asn Ser Met Thr Phe
                80                  85                  90

ctg ccc aat atc acc ctg gga tat cgc ata ttt gac acg tgt aac acc   759
Leu Pro Asn Ile Thr Leu Gly Tyr Arg Ile Phe Asp Thr Cys Asn Thr
            95                  100                 105

gtg tcc aag gcg cta gag gca aca ctc agc ttt gtg gcc cag aac aaa   807
Val Ser Lys Ala Leu Glu Ala Thr Leu Ser Phe Val Ala Gln Asn Lys
        110                 115                 120

atc gac tcg ctg aac tta gat gag ttc tgt aac tgc tct gac cat atc   855
Ile Asp Ser Leu Asn Leu Asp Glu Phe Cys Asn Cys Ser Asp His Ile
    125                 130                 135

cca tcc aca ata gca gtg gtc ggg gca acc ggg tca gga atc tcc acg   903
Pro Ser Thr Ile Ala Val Val Gly Ala Thr Gly Ser Gly Ile Ser Thr
140                 145                 150                 155

gct gtg gcc aat cta ttg gga tta ttt tac att cca cag gtc agc tat   951
Ala Val Ala Asn Leu Leu Gly Leu Phe Tyr Ile Pro Gln Val Ser Tyr
                160                 165                 170

gcc tcc tcg agc agg ctg ctc agc aac aag aat gag tac aag gcc ttc   999
Ala Ser Ser Ser Arg Leu Leu Ser Asn Lys Asn Glu Tyr Lys Ala Phe
            175                 180                 185

ctg agg acc atc ccc aat gat gag caa cag gcc acg gcc atg gcc gag   1047
Leu Arg Thr Ile Pro Asn Asp Glu Gln Gln Ala Thr Ala Met Ala Glu
        190                 195                 200
```

FIG. 4A

```
atc atc gag cac ttc cag tgg aac tgg gtg gga acc ctg gca gcc gac   1095
Ile Ile Glu His Phe Gln Trp Asn Trp Val Gly Thr Leu Ala Ala Asp
    205                 210                 215

gat gac tat ggc cgc cca ggc att gac aag ttc cgg gag gag gcc gtt   1143
Asp Asp Tyr Gly Arg Pro Gly Ile Asp Lys Phe Arg Glu Glu Ala Val
220                 225                 230                 235

aag agg gac atc tgt att gac ttc agt gag atg atc tct cag tac tac   1191
Lys Arg Asp Ile Cys Ile Asp Phe Ser Glu Met Ile Ser Gln Tyr Tyr
                240                 245                 250

acc cag aag cag ttg gag ttc atc gcc gac gtc atc cag aac tcc tcg   1239
Thr Gln Lys Gln Leu Glu Phe Ile Ala Asp Val Ile Gln Asn Ser Ser
            255                 260                 265

gcc aag gtc atc gtg gtc ttc tcc aat ggc ccc gac ctg gag ccg ctc   1287
Ala Lys Val Ile Val Val Phe Ser Asn Gly Pro Asp Leu Glu Pro Leu
        270                 275                 280

atc cag gag ata gtt cgg aga aac atc acc gat cgg atc tgg ctg gcc   1335
Ile Gln Glu Ile Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala
    285                 290                 295

agc gag gct tgg gcc agc tct tcg ctc att gcc aag cca gag tac ttc   1383
Ser Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Phe
300                 305                 310                 315

cac gtg gtc ggc ggc acc atc ggc ttc gct ctc agg gcg ggg cgt atc   1431
His Val Val Gly Gly Thr Ile Gly Phe Ala Leu Arg Ala Gly Arg Ile
                320                 325                 330

cca ggg ttc aac aag ttc ctg aag gag gtc cac ccc agc agg tcc tcg   1479
Pro Gly Phe Asn Lys Phe Leu Lys Glu Val His Pro Ser Arg Ser Ser
            335                 340                 345

gac aat ggg ttt gtc aag gag ttc tgg gag gag acc ttc aac tgc tac   1527
Asp Asn Gly Phe Val Lys Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr
        350                 355                 360

ttc acc gag aag acc ctg acg cag ctg aag aat tcc aag gtg ccc tcg   1575
Phe Thr Glu Lys Thr Leu Thr Gln Leu Lys Asn Ser Lys Val Pro Ser
    365                 370                 375

cac gga ccg gcg gct caa ggg gac ggc tcc aag gcg ggg aac tcc aga   1623
His Gly Pro Ala Ala Gln Gly Asp Gly Ser Lys Ala Gly Asn Ser Arg
380                 385                 390                 395
cgg aca gcc cta cgc cac ccc tgc act ggg gag gag aac atc acc agc   1671
Arg Thr Ala Leu Arg His Pro Cys Thr Gly Glu Glu Asn Ile Thr Ser
                400                 405                 410

gtg gag acc ccc tac ctg gat tat aca cac ctg agg atc tcc tac aat   1719
Val Glu Thr Pro Tyr Leu Asp Tyr Thr His Leu Arg Ile Ser Tyr Asn
            415                 420                 425

gta tac gtg gcc gtc tac tcc att gct cac gcc ctg caa gac atc cac   1767
Val Tyr Val Ala Val Tyr Ser Ile Ala His Ala Leu Gln Asp Ile His
        430                 435                 440
```

FIG. 4B

```
tct tgc aaa ccc ggc acg ggc atc ttt gca aac gga tct tgt gca gat   1815
Ser Cys Lys Pro Gly Thr Gly Ile Phe Ala Asn Gly Ser Cys Ala Asp
    445                 450                 455

att aaa aaa gtt gag gcc tgg cag gtc ctc aac cat ctg ctg cat ctg   1863
Ile Lys Lys Val Glu Ala Trp Gln Val Leu Asn His Leu Leu His Leu
460                 465                 470                 475

aag ttt acc aac agc atg ggt gag cag gtt gac ttt gac gat caa ggt   1911
Lys Phe Thr Asn Ser Met Gly Glu Gln Val Asp Phe Asp Asp Gln Gly
                480                 485                 490

gac ctc aag ggg aac tac acc att atc aac tgg cag ctc tcc gca gag   1959
Asp Leu Lys Gly Asn Tyr Thr Ile Ile Asn Trp Gln Leu Ser Ala Glu
            495                 500                 505

gat gaa tcg gtg ttg ttc cat gag gtg ggc aac tac aac gcc tac gct   2007
Asp Glu Ser Val Leu Phe His Glu Val Gly Asn Tyr Asn Ala Tyr Ala
        510                 515                 520

aag ccc agt gac cga ctc aac atc aac gaa aag aaa atc ctc tgg agt   2055
Lys Pro Ser Asp Arg Leu Asn Ile Asn Glu Lys Lys Ile Leu Trp Ser
    525                 530                 535

ggc ttc tcc aaa gtg gtt cct ttc tcc aac tgc agt cga gac tgt gtg   2103
Gly Phe Ser Lys Val Val Pro Phe Ser Asn Cys Ser Arg Asp Cys Val
540                 545                 550                 555

ccg ggc acc agg aag ggg atc atc gag ggg gag ccc acc tgc tgc ttt   2151
Pro Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr Cys Cys Phe
                560                 565                 570

gaa tgc atg gca tgt gca gag gga gag ttc agt gat gaa aac gat gca   2199
Glu Cys Met Ala Cys Ala Glu Gly Glu Phe Ser Asp Glu Asn Asp Ala
            575                 580                 585

agt gcg tgt aca aag tgc ccg aat gat ttc tgg tcg aat gag aac cac   2247
Ser Ala Cys Thr Lys Cys Pro Asn Asp Phe Trp Ser Asn Glu Asn His
        590                 595                 600

acg tcg tgc atc gcc aag gag atc gag tac ctg tcg tgg acg gag ccc   2295
Thr Ser Cys Ile Ala Lys Glu Ile Glu Tyr Leu Ser Trp Thr Glu Pro
    605                 610                 615

ttc ggg atc gct ctg acc atc ttc gcc gta ctg ggc atc ctg atc acc   2343
Phe Gly Ile Ala Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr
620                 625                 630                 635

tcc ttc gtg ctg ggg gtc ttc atc aag ttc agg aac act ccc atc gtg   2391
Ser Phe Val Leu Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val
                640                 645                 650

aag gcc acc aac cgg gag ttg tcc tac ctg ctg ctc ttc tcc ctc atc   2439
Lys Ala Thr Asn Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile
            655                 660                 665

tgc tgc ttc tcc agc tcg ctc atc ttc atc ggc gag ccc agg gac tgg   2487
Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Arg Asp Trp
        670                 675                 680
```

FIG. 4C

acc tgt cgg ctc cgc caa ccg gcc ttt ggc atc agc ttc gtc ctg tgc 2535
Thr Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys
685 690 695

atc tcc tgc atc ctg gtg aag acc aac cgg gtg ctg ctg gtc ttc gag 2583
Ile Ser Cys Ile Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu
700 705 710 715

gcc aag atc ccc acc agc ctc cac cgc aag tgg gtg ggc ctc aac ctg 2631
Ala Lys Ile Pro Thr Ser Leu His Arg Lys Trp Val Gly Leu Asn Leu
720 725 730

cag ttc ctc ctg gtc ttc ctc tgc atc ctg gtg caa atc gtc acc tgc 2679
Gln Phe Leu Leu Val Phe Leu Cys Ile Leu Val Gln Ile Val Thr Cys
735 740 745

atc atc tgg ctc tac acc gcg cct ccc tcc agc tac agg aac cat gag 2727
Ile Ile Trp Leu Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn His Glu
750 755 760

ctg gag gac gag gtc atc ttc atc acc tgc gac gag ggc tcg ctc atg 2775
Leu Glu Asp Glu Val Ile Phe Ile Thr Cys Asp Glu Gly Ser Leu Met
765 770 775

gcg ctg ggc ttc ctc atc ggc tac acc tgc ctc ctc gcc gcc atc tgc 2823
Ala Leu Gly Phe Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys
780 785 790 795

ttc ttc ttc gcc ttc aag tcc cgt aag ctg ccg gag aac ttc aac gag 2871
Phe Phe Phe Ala Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Asn Glu
800 805 810

gct aag ttc atc acc ttc agc atg ttg atc ttc ttc atc gtc tgg atc 2919
Ala Lys Phe Ile Thr Phe Ser Met Leu Ile Phe Phe Ile Val Trp Ile
815 820 825

tcc ttc atc ccc gcc tat gtc agc acc tac ggc aag ttt gtg tcg gcc 2967
Ser Phe Ile Pro Ala Tyr Val Ser Thr Tyr Gly Lys Phe Val Ser Ala
830 835 840

gtg gag gtg att gcc atc ctg gcc tcc agc ttc ggg ctg ctg ggc tgc 3015
Val Glu Val Ile Ala Ile Leu Ala Ser Ser Phe Gly Leu Leu Gly Cys
845 850 855

att tac ttc aac aag tgt tac atc atc ctg ttc aag ccg tgc cgt aac 3063
Ile Tyr Phe Asn Lys Cys Tyr Ile Ile Leu Phe Lys Pro Cys Arg Asn
860 865 870 875

acc atc gag gag gtg cgc tgc agc acg gcg gcc cac gcc ttc aag gtg 3111
Thr Ile Glu Glu Val Arg Cys Ser Thr Ala Ala His Ala Phe Lys Val
880 885 890

gcg gcc cgg gcc acc ctc cgg cgc agc gcc gcg tct cgc aag cgc tcc 3159
Ala Ala Arg Ala Thr Leu Arg Arg Ser Ala Ala Ser Arg Lys Arg Ser
895 900 905

agc agc ctg tgc ggc tcc acc atc tcc tcg ccc gcc tcg tcc acc tgc 3207
Ser Ser Leu Cys Gly Ser Thr Ile Ser Ser Pro Ala Ser Ser Thr Cys
910 915 920

FIG. 4D

```
ggg ccg ggc ctc acc atg gag atg cag cgc tgc agc acg cag aag gtc   3255
Gly Pro Gly Leu Thr Met Glu Met Gln Arg Cys Ser Thr Gln Lys Val
    925                 930                 935

agc ttc ggc agc ggc acc gtc acc ctg tcg ctc agc ttc gag gag aca   3303
Ser Phe Gly Ser Gly Thr Val Thr Leu Ser Leu Ser Phe Glu Glu Thr
940                 945                 950                 955

ggc cga tac gcc acc ctc agc cgc acg gcc cgc agc agg aac tcg gcg   3351
Gly Arg Tyr Ala Thr Leu Ser Arg Thr Ala Arg Ser Arg Asn Ser Ala
                960                 965                 970

gat ggc cgc agc ggc gac gac ctg cca tct aga cac cac gac cag ggc   3399
Asp Gly Arg Ser Gly Asp Asp Leu Pro Ser Arg His His Asp Gln Gly
            975                 980                 985

ccg cct cag aaa tgc gag ccc cag ccc gcc aac gat gcc cga tac aag   3447
Pro Pro Gln Lys Cys Glu Pro Gln Pro Ala Asn Asp Ala Arg Tyr Lys
        990                 995                1000

gcg gcg ccg acc aag ggc acc cta gag tcg ccg ggc ggc agc aag gag   3495
Ala Ala Pro Thr Lys Gly Thr Leu Glu Ser Pro Gly Gly Ser Lys Glu
    1005                1010                1015

cgc ccc aca act atg gag gaa acc taa tccaactcct ccatcaaccc         3542
Arg Pro Thr Thr Met Glu Glu Thr  *
1020                1025

caagaacatc ctccacggca gcaccgtcga caactgacat caactcctaa ccggtggctg 3602
cccaacctct cccctctccg gcactttgcg ttttgctgaa gattgcagca tctgcagttc 3662
cttttatccc tgatttttctg acttggatat ttactagtgt gcgatggaat atcacaacat 3722
aatgagttgc acaattaggt gagcagagtt gtgtcaaagt atctgaacta tctgaagtat 3782
ctgaactact ttattctctc gaattgtatt acaaacattt gaagtatttt tagtgacatt 3842
atgttctaac attgtcaaga taatttgtta caacatataa ggtaccacct gaagcagtga 3902
ctgagattgc cactgtgatg acagaactgt tttataacat ttatcattga aacctggatt 3962
gcaacaggaa tataatgact gtaacaaaaa aattgttgat tatcttaaaa atgcaaattg 4022
taatcagatg tgtaaaattg gtaattactt ctgtacatta aatgcatatt tcttgataaa 4082
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaagcggcc cgacagcaac gg         4134
```

FIG. 4E

```
aattccgttg ctgtcggttc agtccaagtc tcctccagtg caaaatgaga aatggtggtc 60
gccattacag gaacatgcac tacatctgtg ttaatgaaat attgtcagtt atctgaaggt 120
tattaaaatg tttctgcaag gatggcttca cgagaaatca attctgcacg ttttcccatt 180
gtcattgtat gaataactga ccaaagggat gtaacaaaat ggaacaaagc tgaggaccac 240
gttcaccctt tcttggagca tacgatcaac cctgaaggag atggaagact tgaggaggaa 300
atggggattg atcttccagg agttctgctg taaagcgatc cctcaccatt acaaagataa 360
gcagaaatcc tccaggcatc ctctgtaaac gggctggcgt agtgtggctt ggtcaaggaa 420
cagagacagg gctgcaca atg gct cag ctt cac tgc caa ctc tta ttc ttg   471
                    Met Ala Gln Leu His Cys Gln Leu Leu Phe Leu
                     1               5                  10

gga ttt aca ctc cta cag tcg tac aat gtc tca ggg tat ggt cca aac   519
Gly Phe Thr Leu Leu Gln Ser Tyr Asn Val Ser Gly Tyr Gly Pro Asn
            15                  20                  25

caa agg gcc cag aag aaa gga gac atc ata ctg gga ggt ctc ttc cca   567
Gln Arg Ala Gln Lys Lys Gly Asp Ile Ile Leu Gly Gly Leu Phe Pro
        30                  35                  40

ata cac ttt gga gta gcc gcc aag gat cag gac tta aaa tcg aga ccg   615
Ile His Phe Gly Val Ala Ala Lys Asp Gln Asp Leu Lys Ser Arg Pro
    45                  50                  55

gag gcg aca aaa tgt att cgg tac aat ttt cga ggc ttc cga tgg ctc   663
Glu Ala Thr Lys Cys Ile Arg Tyr Asn Phe Arg Gly Phe Arg Trp Leu
60                  65                  70                  75

cag gcg atg ata ttc gca att gaa gag att aac aac agt atg act ttc   711
Gln Ala Met Ile Phe Ala Ile Glu Glu Ile Asn Asn Ser Met Thr Phe
                80                  85                  90

ctg ccc aat atc acc ctg gga tat cgc ata ttt gac acg tgt aac acc   759
Leu Pro Asn Ile Thr Leu Gly Tyr Arg Ile Phe Asp Thr Cys Asn Thr
            95                  100                 105

gtg tcc aag gcg cta gag gca aca ctc agc ttt gtg gcc cag aac aaa   807
Val Ser Lys Ala Leu Glu Ala Thr Leu Ser Phe Val Ala Gln Asn Lys
        110                 115                 120

atc gac tcg ctg aac tta gat gag ttc tgt aac tgc tct gac cat atc   855
Ile Asp Ser Leu Asn Leu Asp Glu Phe Cys Asn Cys Ser Asp His Ile
    125                 130                 135

cca tcc aca ata gca gtg gtc ggg gca acc ggg tca gga atc tcc acg   903
Pro Ser Thr Ile Ala Val Val Gly Ala Thr Gly Ser Gly Ile Ser Thr
140                 145                 150                 155

gct gtg gcc aat cta ttg gga tta ttt tac att cca cag gtc agc tat   951
Ala Val Ala Asn Leu Leu Gly Leu Phe Tyr Ile Pro Gln Val Ser Tyr
                160                 165                 170

gcc tcc tcg agc agg ctg ctc agc aac aag aat gag tac aag gcc ttc   999
Ala Ser Ser Ser Arg Leu Leu Ser Asn Lys Asn Glu Tyr Lys Ala Phe
            175                 180                 185

ctg agg acc atc ccc aat gat gag caa cag gcc acg gcc atg gcc gag  1047
Leu Arg Thr Ile Pro Asn Asp Glu Gln Gln Ala Thr Ala Met Ala Glu
        190                 195                 200
```

FIG. 5A

```
atc atc gag cac ttc cag tgg aac tgg gtg gga acc ctg gca gcc gac   1095
Ile Ile Glu His Phe Gln Trp Asn Trp Val Gly Thr Leu Ala Ala Asp
    205                 210                 215

gat gac tat ggc cgc cca ggc att gac aag ttc cgg gag gag gcc gtt   1143
Asp Asp Tyr Gly Arg Pro Gly Ile Asp Lys Phe Arg Glu Glu Ala Val
220                 225                 230                 235

aag agg gac atc tgt att gac ttc agt gag atg atc tct cag tac tac   1191
Lys Arg Asp Ile Cys Ile Asp Phe Ser Glu Met Ile Ser Gln Tyr Tyr
                240                 245                 250

acc cag aag cag ttg gag ttc atc gcc gac gtc atc cag aac tcc tcg   1239
Thr Gln Lys Gln Leu Glu Phe Ile Ala Asp Val Ile Gln Asn Ser Ser
            255                 260                 265

gcc aag gtc atc gtg gtc ttc tcc aat ggc ccc gac ctg gag ccg ctc   1287
Ala Lys Val Ile Val Val Phe Ser Asn Gly Pro Asp Leu Glu Pro Leu
        270                 275                 280

atc cag gag ata gtt cgg aga aac atc acc gat cgg atc tgg ctg gcc   1335
Ile Gln Glu Ile Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala
    285                 290                 295

agc gag gct tgg gcc agc tct tcg ctc att gcc aag cca gag tac ttc   1383
Ser Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Phe
300                 305                 310                 315

cac gtg gtc ggc ggc acc atc ggc ttc gct ctc agg gcg ggg cgt atc   1431
His Val Val Gly Gly Thr Ile Gly Phe Ala Leu Arg Ala Gly Arg Ile
                320                 325                 330

cca ggg ttc aac aag ttc ctg aag gag gtc cac ccc agc agg tcc tcg   1479
Pro Gly Phe Asn Lys Phe Leu Lys Glu Val His Pro Ser Arg Ser Ser
            335                 340                 345

gac aat ggg ttt gtc aag gag ttc tgg gag gag acc ttc aac tgc tac   1527
Asp Asn Gly Phe Val Lys Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr
        350                 355                 360

ttc acc gag aag acc ctg acg cag ctg aag aat tcc aag gtg ccc tcg   1575
Phe Thr Glu Lys Thr Leu Thr Gln Leu Lys Asn Ser Lys Val Pro Ser
    365                 370                 375

cac gga ccg gcg gct caa ggg gac ggc tcc aag gcg ggg aac tcc aga   1623
His Gly Pro Ala Ala Gln Gly Asp Gly Ser Lys Ala Gly Asn Ser Arg
380                 385                 390                 395
cgg aca gcc cta cgc cac ccc tgc act ggg gag gag aac atc acc agc   1671
Arg Thr Ala Leu Arg His Pro Cys Thr Gly Glu Glu Asn Ile Thr Ser
                400                 405                 410

gtg gag acc ccc tac ctg gat tat aca cac ctg agg atc tcc tac aat   1719
Val Glu Thr Pro Tyr Leu Asp Tyr Thr His Leu Arg Ile Ser Tyr Asn
            415                 420                 425

gta tac gtg gcc gtc tac tcc att gct cac gcc ctg caa gac atc cac   1767
Val Tyr Val Ala Val Tyr Ser Ile Ala His Ala Leu Gln Asp Ile His
        430                 435                 440
```

FIG. 5B

```
tct tgc aaa ccc ggc acg ggc atc ttt gca aac gga tct tgt gca gat   1815
Ser Cys Lys Pro Gly Thr Gly Ile Phe Ala Asn Gly Ser Cys Ala Asp
    445                 450                 455

att aaa aaa gtt gag gcc tgg cag gtc ctc aac cat ctg ctg cat ctg   1863
Ile Lys Lys Val Glu Ala Trp Gln Val Leu Asn His Leu Leu His Leu
460                 465                 470                 475

aag ttt acc aac agc atg ggt gag cag gtt gac ttt gac gat caa ggt   1911
Lys Phe Thr Asn Ser Met Gly Glu Gln Val Asp Phe Asp Asp Gln Gly
                480                 485                 490

gac ctc aag ggg aac tac acc att atc aac tgg cag ctc tcc gca gag   1959
Asp Leu Lys Gly Asn Tyr Thr Ile Ile Asn Trp Gln Leu Ser Ala Glu
            495                 500                 505

gat gaa tcg gtg ttg ttc cat gag gtg ggc aac tac aac gcc tac gct   2007
Asp Glu Ser Val Leu Phe His Glu Val Gly Asn Tyr Asn Ala Tyr Ala
        510                 515                 520

aag ccc agt gac cga ctc aac atc aac gaa aag aaa atc ctc tgg agt   2055
Lys Pro Ser Asp Arg Leu Asn Ile Asn Glu Lys Lys Ile Leu Trp Ser
    525                 530                 535

ggc ttc tcc aaa gtg gtt cct ttc tcc aac tgc agt cga gac tgt gtg   2103
Gly Phe Ser Lys Val Val Pro Phe Ser Asn Cys Ser Arg Asp Cys Val
540                 545                 550                 555

ccg ggc acc agg aag ggg atc atc gag ggg gag ccc acc tgc tgc ttt   2151
Pro Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr Cys Cys Phe
                560                 565                 570

gaa tgc atg gca tgt gca gag gga gag ttc agt gat gaa aac gat gca   2199
Glu Cys Met Ala Cys Ala Glu Gly Glu Phe Ser Asp Glu Asn Asp Ala
            575                 580                 585

agt gcg tgt aca aag tgc ccg aat gat ttc tgg tcg aat gag aac cac   2247
Ser Ala Cys Thr Lys Cys Pro Asn Asp Phe Trp Ser Asn Glu Asn His
        590                 595                 600

acg tcg tgc atc gcc aag gag atc gag tac ctg tcg tgg acg gag ccc   2295
Thr Ser Cys Ile Ala Lys Glu Ile Glu Tyr Leu Ser Trp Thr Glu Pro
    605                 610                 615

ttc ggg atc gct ctg acc atc ttc gcc gta ctg ggc atc ctg atc acc   2343
Phe Gly Ile Ala Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr
620                 625                 630                 635

tcc ttc gtg ctg ggg gtc ttc atc aag ttc agg aac act ccc atc gtg   2391
Ser Phe Val Leu Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val
                640                 645                 650

aag gcc acc aac cgg gag ttg tcc tac ctg ctg ctc ttc tcc ctc atc   2439
Lys Ala Thr Asn Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile
            655                 660                 665

tgc tgc ttc tcc agc tcg ctc atc ttc atc ggc gag ccc agg gac tgg   2487
Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Arg Asp Trp
        670                 675                 680
```

FIG. 5C

```
acc tgt cgg ctc cgc caa ccg gcc ttt ggc atc agc ttc gtc ctg tgc   2535
Thr Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys
    685                 690                 695

atc tcc tgc atc ctg gtg aag acc aac cgg gtg ctg ctg gtc ttc gag   2583
Ile Ser Cys Ile Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu
700                 705                 710                 715

gcc aag atc ccc acc agc ctc cac cgc aag tgg gtg ggc ctc aac ctg   2631
Ala Lys Ile Pro Thr Ser Leu His Arg Lys Trp Val Gly Leu Asn Leu
                720                 725                 730

cag ttc ctc ctg gtc ttc ctc tgc atc ctg gtg caa atc gtc acc tgc   2679
Gln Phe Leu Leu Val Phe Leu Cys Ile Leu Val Gln Ile Val Thr Cys
            735                 740                 745

atc atc tgg ctc tac acc gcg cct ccc tcc agc tac agg aac cat gag   2727
Ile Ile Trp Leu Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn His Glu
        750                 755                 760

ctg gag gac gag gtc atc ttc atc acc tgc gac gag ggc tcg ctc atg   2775
Leu Glu Asp Glu Val Ile Phe Ile Thr Cys Asp Glu Gly Ser Leu Met
    765                 770                 775

gcg ctg ggc ttc ctc atc ggc tac acc tgc ctc ctc gcc gcc atc tgc   2823
Ala Leu Gly Phe Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys
780                 785                 790                 795

ttc ttc ttc gcc ttc aag tcc cgt aag ctg ccg gag aac ttc aac gag   2871
Phe Phe Phe Ala Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Asn Glu
                800                 805                 810

gct aag ttc atc acc ttc agc atg ttg atc ttc ttc atc gtc tgg atc   2919
Ala Lys Phe Ile Thr Phe Ser Met Leu Ile Phe Phe Ile Val Trp Ile
            815                 820                 825

tcc ttc atc ccc gcc tat gtc agc acc tac ggc aag ttt gtg tcg gcc   2967
Ser Phe Ile Pro Ala Tyr Val Ser Thr Tyr Gly Lys Phe Val Ser Ala
        830                 835                 840

gtg gag gtg att gcc atc ctg gcc tcc agc ttc ggg ctg ctg ggc tgc   3015
Val Glu Val Ile Ala Ile Leu Ala Ser Ser Phe Gly Leu Leu Gly Cys
    845                 850                 855

att tac ttc aac aag tgt tac atc atc ctg ttc aag ccg tgc cgt aac   3063
Ile Tyr Phe Asn Lys Cys Tyr Ile Ile Leu Phe Lys Pro Cys Arg Asn
860                 865                 870                 875

acc atc gag gag gtg cgc tgc agc acg gcg gcc cac gcc ttc aag gtg   3111
Thr Ile Glu Glu Val Arg Cys Ser Thr Ala Ala His Ala Phe Lys Val
                880                 885                 890

gcg gcc cgg gcc acc ctc cgg cgc agc gcc gcg tct cgc aag cgc tcc   3159
Ala Ala Arg Ala Thr Leu Arg Arg Ser Ala Ala Ser Arg Lys Arg Ser
            895                 900                 905

agc agc ctg tgc ggc tcc acc atc tcc tcg ccc gcc tcg tcc acc tgc   3207
Ser Ser Leu Cys Gly Ser Thr Ile Ser Ser Pro Ala Ser Ser Thr Cys
        910                 915                 920
```

FIG. 5D

```
ggg ccg ggc ctc acc atg gag atg cag cgc tgc agc acg cag aag gtc   3255
Gly Pro Gly Leu Thr Met Glu Met Gln Arg Cys Ser Thr Gln Lys Val
    925                 930                 935

agc ttc ggc agc ggc acc gtc acc ctg tcg ctc agc ttc gag gag aca   3303
Ser Phe Gly Ser Gly Thr Val Thr Leu Ser Leu Ser Phe Glu Glu Thr
940                 945                 950                 955

ggc cga tac gcc acc ctc agc cgc acg gcc cgc agc agg aac tcg gcg   3351
Gly Arg Tyr Ala Thr Leu Ser Arg Thr Ala Arg Ser Arg Asn Ser Ala
                960                 965                 970

gat ggc cgc agc ggc gac gac ctg cca tct aga cac cac gac cag ggc   3399
Asp Gly Arg Ser Gly Asp Asp Leu Pro Ser Arg His His Asp Gln Gly
            975                 980                 985

ccg cct cag aaa tgc gag ccc cag ccc gcc aac gat gcc cga tac aag   3447
Pro Pro Gln Lys Cys Glu Pro Gln Pro Ala Asn Asp Ala Arg Tyr Lys
        990                 995                1000

gcg gcg ccg acc aag ggc acc cta gag tcg ccg ggc ggc agc aag gag   3495
Ala Ala Pro Thr Lys Gly Thr Leu Glu Ser Pro Gly Gly Ser Lys Glu
    1005                1010                1015

cgc ccc aca act atg gag gaa acc taa tccaactcct ccatcaaccc         3542
Arg Pro Thr Thr Met Glu Glu Thr  *
1020                1025

caagaacatc ctccacggca gcaccgtcga caactgacat caactcctaa ccggtggctg 3602
cccaacctct cccctctccg gcactttgcg ttttgctgaa gattgcagca tctgcagttc 3662
cttttatccc tgattttctg acttggatat ttactagtgt gcgatggaat atcacaacat 3722
aatgagttgc acaattaggt gagcagagtt gtgtcaaagt atctgaacta tctgaagtat 3782
ctgaactact ttattctctc gaattgtatt acaaacattt gaagtatttt tagtgacatt 3842
atgttctaac attgtcaaga taatttgtta caacatataa ggtaccacct gaagcagtga 3902
ctgagattgc cactgtgatg acagaactgt tttataacat ttatcattga aacctggatt 3962
gcaacaggaa tataatgact gtaacaaaaa aattgttgat tatcttaaaa atgcaaattg 4022
taatcagatg tgtaaaattg gtaattactt ctgtacatta aatgcatatt tcttgataaa 4082
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaagcggcc cgacagcaac gg         4134
```


FIG. 5E

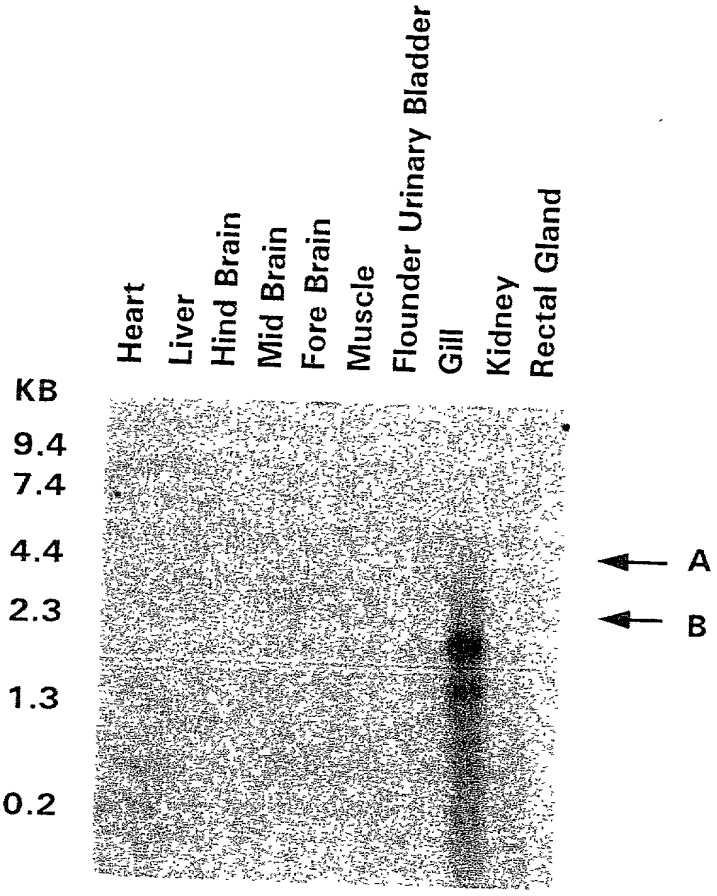
KB
9.4
7.4
4.4
2.3
1.3
0.2
Heart
Liver
Hind Brain
Mid Brain
Fore Brain
Muscle
Flounder Urinary Bladder
Gill
Kidney
Rectal Gland
A
B

FIG.6

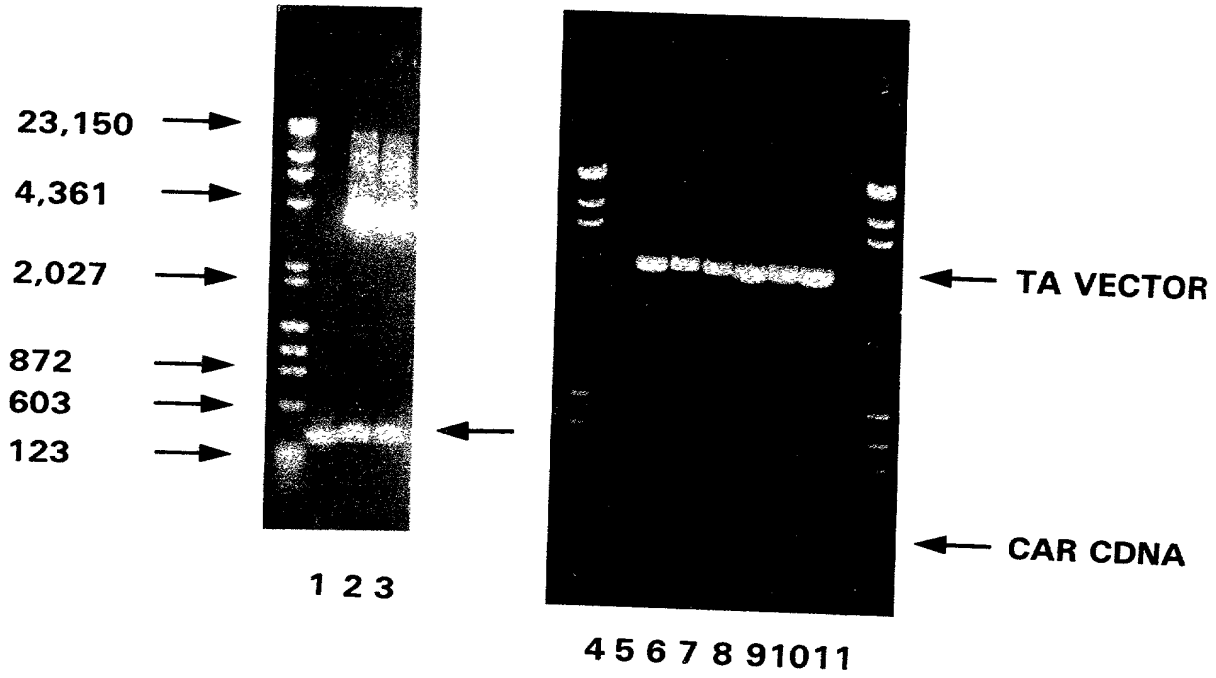

FIG.7A FIG.7B

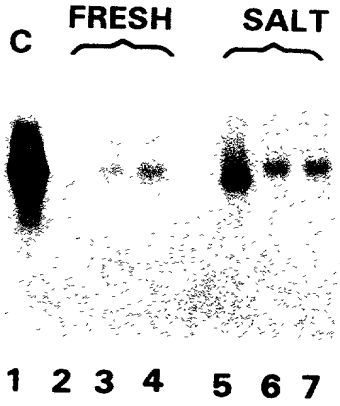

FIG.8

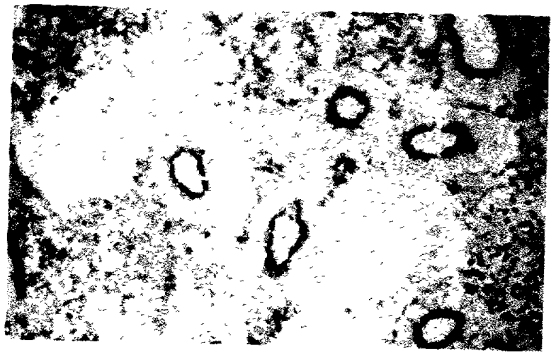

FIG.9A

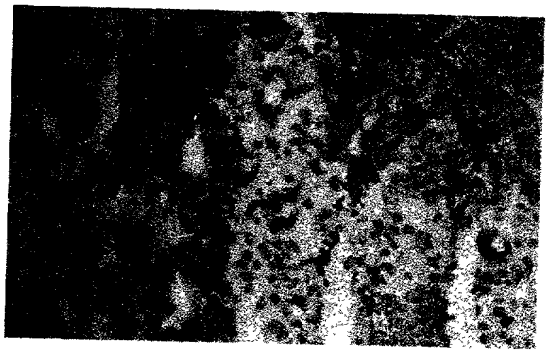

FIG.9B

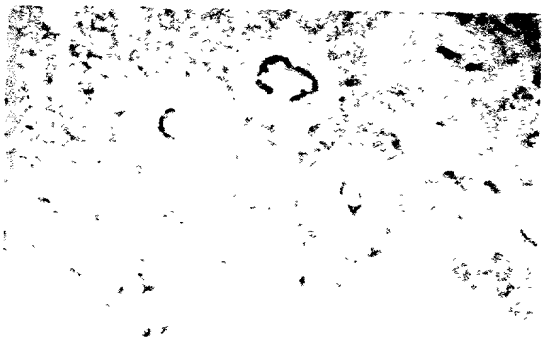

FIG.9C

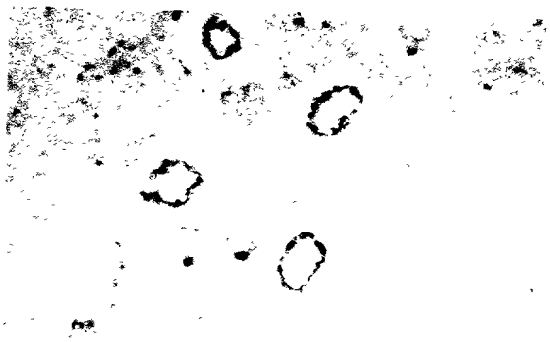

FIG.9D

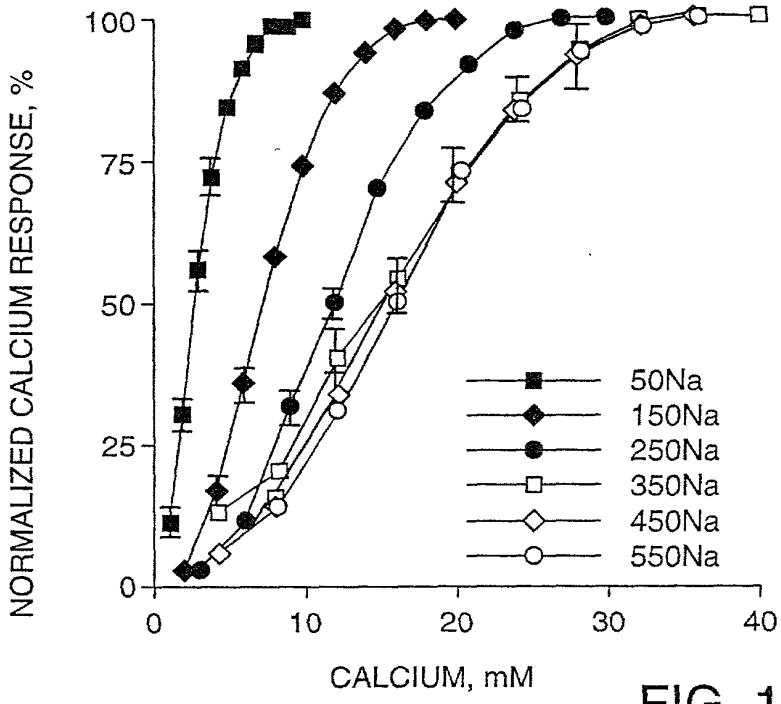

FIG. 10

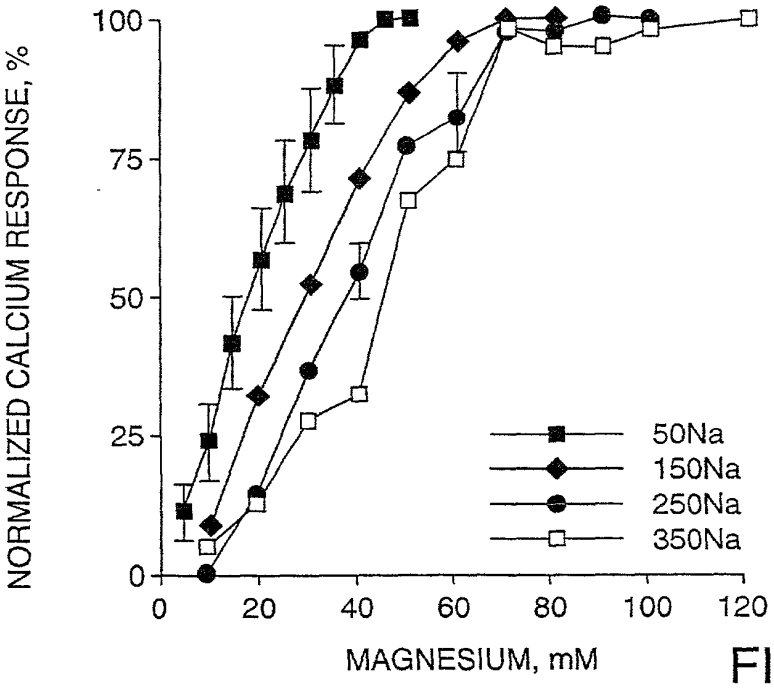

FIG. 11

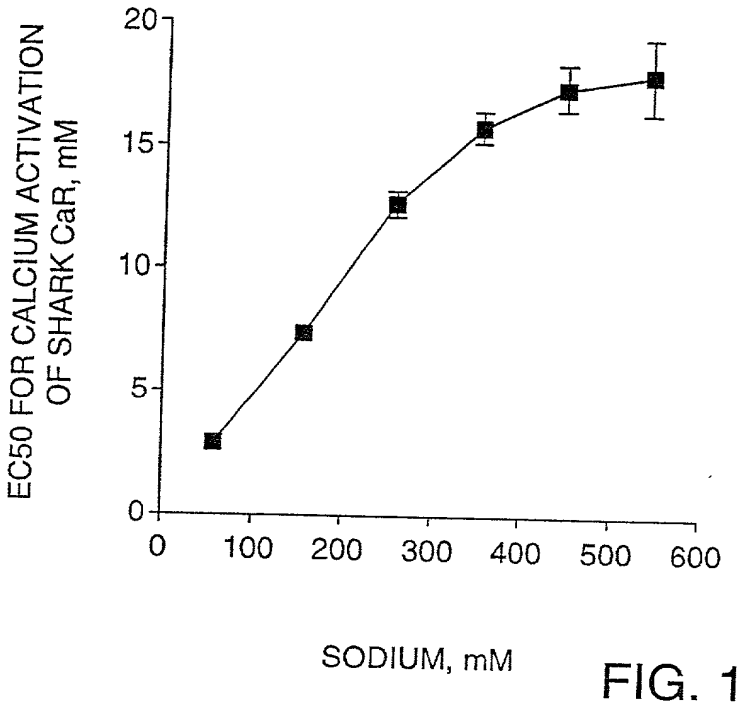

FIG. 12

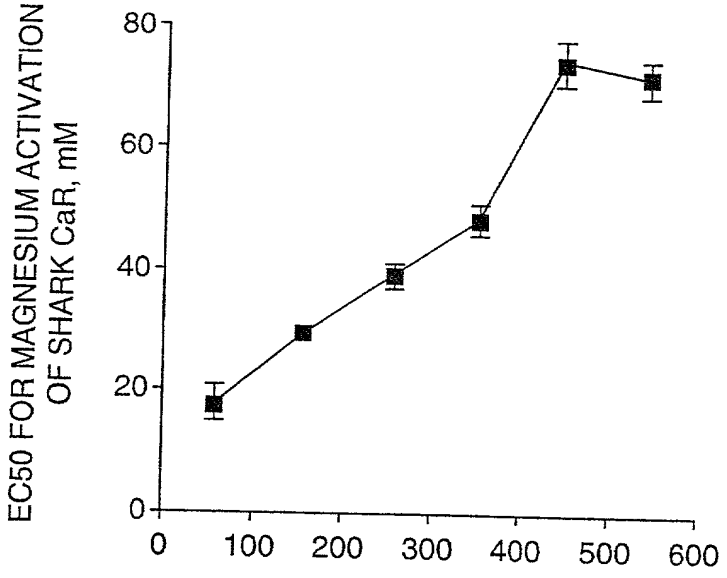

FIG. 13

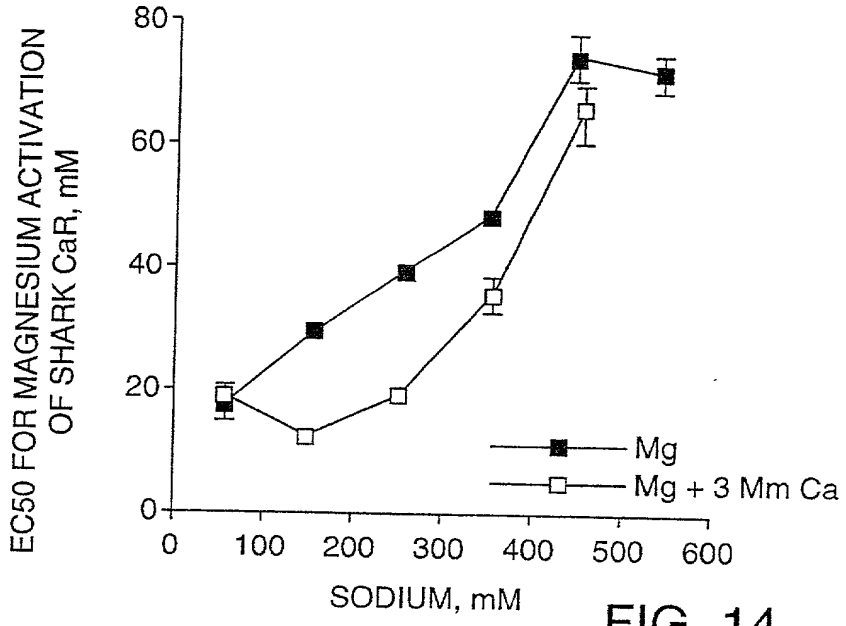

FIG. 14

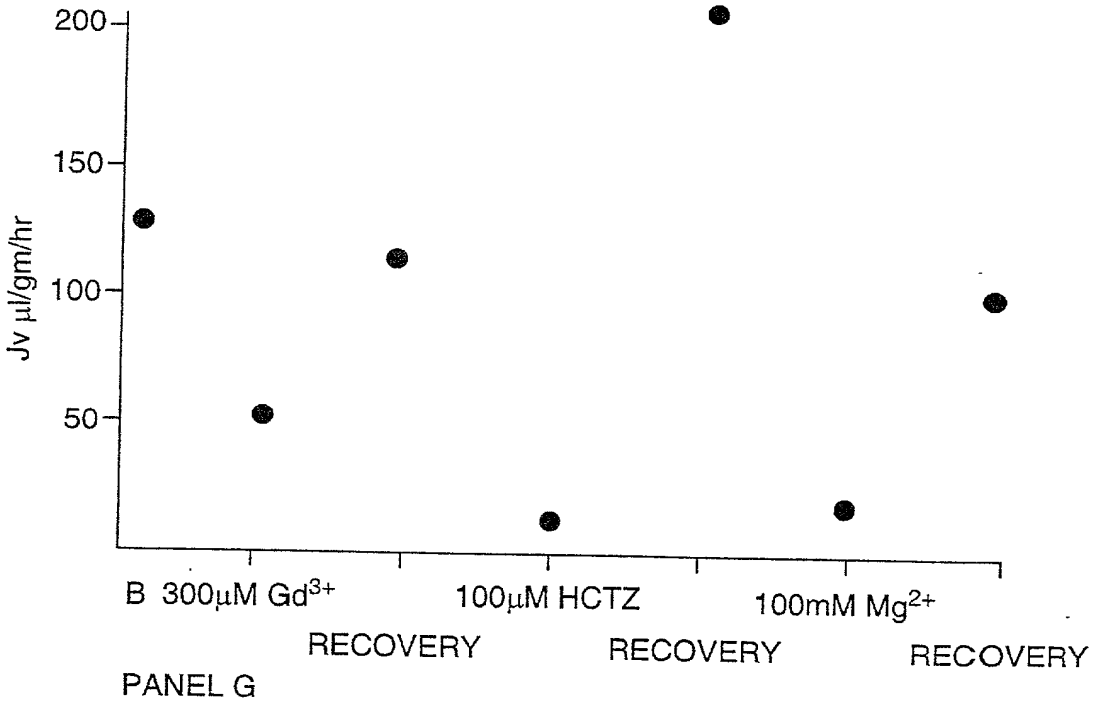

FIG. 15

```
cta cta gtc ata tgg att gcg gcg gay gay gat tat ggc cgc cca ggg   48
Leu Leu Val Ile Trp Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly
 1               5                  10                  15

ata gat aag ttt cga gaa gaa gct gaa gag agg gac atc tgc ata gat   96
Ile Asp Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp
            20                  25                  30

ttc aat gag atg att tct cag tac tat aca caa aaa gag ctg gag ttt  144
Phe Asn Glu Met Ile Ser Gln Tyr Tyr Thr Gln Lys Glu Leu Glu Phe
        35                  40                  45

att gca gat act att cag aat tcc tca gcc aaa gtg att gty gtc ttc  192
Ile Ala Asp Thr Ile Gln Asn Ser Ser Ala Lys Val Ile Xaa Val Phe
    50                  55                  60

tca aat ggc cct gac ttg gaa cca cta ata caa gag ata gtt cga cgg  240
Ser Asn Gly Pro Asp Leu Glu Pro Leu Ile Gln Glu Ile Val Arg Arg
65                  70                  75                  80

aac ata act gat aga ata tgg cta gca agt gaa gcg tgg gct agt tcc  288
Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser
                85                  90                  95

tca ctg ata gcc aaa cca gaa tac ttc cat gtt gtt ggt gga acc att  336
Ser Leu Ile Ala Lys Pro Glu Tyr Phe His Val Val Gly Gly Thr Ile
            100                 105                 110

gga ttt gca cta aga gca gga cgc atc cca gga ttc cat gag ttt tta  384
Gly Phe Ala Leu Arg Ala Gly Arg Ile Pro Gly Phe His Glu Phe Leu
        115                 120                 125

aaa aag gtc cat ccc agc agg tcc tcc cac aat ggc ttt gtc aag gaa  432
Lys Lys Val His Pro Ser Arg Ser Ser His Asn Gly Phe Val Lys Glu
    130                 135                 140

ttc tgg gaa gaa aca ttt aat tgt tat ttc act gaa gaa tcc cta aca  480
Phe Trp Glu Glu Thr Phe Asn Cys Tyr Phe Thr Glu Glu Ser Leu Thr
145                 150                 155                 160

caa cta aag aat tgc aaa aca cca acc cat gga tta gca atg cac aat  528
Gln Leu Lys Asn Cys Lys Thr Pro Thr His Gly Leu Ala Met His Asn
                165                 170                 175

gac agt gcg aaa atg ggg cat tcc aca agg aca acg tta cga cct cca  576
Asp Ser Ala Lys Met Gly His Ser Thr Arg Thr Thr Leu Arg Pro Pro
            180                 185                 190
```

FIG. 16A

```
tgc act gga gaa gag aat atc acg agt gtg gag acc cct tac ctg gat   624
Cys Thr Gly Glu Glu Asn Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp
        195                 200                 205

tat act cac ctc cgt att tca tat aat gtg tat gtg gca gtg tat tcg   672
Tyr Thr His Leu Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser
    210                 215                 220

att gct cac gct ctg cag gac atc tat gcc tgc aca cct ggg aag ggg   720
Ile Ala His Ala Leu Gln Asp Ile Tyr Ala Cys Thr Pro Gly Lys Gly
225                 230                 235                 240

att ttt gcg aac gga tca tgt gcc gat atc aaa aaa gtc gaa gcc tgg   768
Ile Phe Ala Asn Gly Ser Cys Ala Asp Ile Lys Lys Val Glu Ala Trp
                245                 250                 255

aat cca tat gac tag t                                            784
Asn Pro Tyr Asp  *
            260
```

FIG. 16B

```
Leu Leu Val Ile Trp Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly
 1               5                  10                  15
Ile Asp Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp
            20                  25                  30
Phe Asn Glu Met Ile Ser Gln Tyr Tyr Thr Gln Lys Glu Leu Glu Phe
        35                  40                  45
Ile Ala Asp Thr Ile Gln Asn Ser Ser Ala Lys Val Ile Val Val Phe
    50                  55                  60
Ser Asn Gly Pro Asp Leu Glu Pro Leu Ile Gln Glu Ile Val Arg Arg
65                  70                  75                  80
Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser
                85                  90                  95
Ser Leu Ile Ala Lys Pro Glu Tyr Phe His Val Val Gly Gly Thr Ile
            100                 105                 110
Gly Phe Ala Leu Arg Ala Gly Arg Ile Pro Gly Phe His Glu Phe Leu
        115                 120                 125
Lys Lys Val His Pro Ser Arg Ser Ser His Asn Gly Phe Val Lys Glu
    130                 135                 140
Phe Trp Glu Glu Thr Phe Asn Cys Tyr Phe Thr Glu Glu Ser Leu Thr
145                 150                 155                 160
Gln Leu Lys Asn Cys Lys Thr Pro Thr His Gly Leu Ala Met His Asn
                165                 170                 175
Asp Ser Ala Lys Met Gly His Ser Thr Arg Thr Thr Leu Arg Pro Pro
            180                 185                 190
Cys Thr Gly Glu Glu Asn Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp
        195                 200                 205
Tyr Thr His Leu Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser
    210                 215                 220
Ile Ala His Ala Leu Gln Asp Ile Tyr Ala Cys Thr Pro Gly Lys Gly
225                 230                 235                 240
Ile Phe Ala Asn Gly Ser Cys Ala Asp Ile Lys Lys Val Glu Ala Trp
                245                 250                 255
Asn Pro Tyr Asp
            260
```

FIG. 17

```
          10          20          30          40          50
           *           *           *           *           *
CTA CTA GTC ATA TGG ATT GCG GCG GAY GAY GAT TAT GGC CGC CCA GGG ATA GAT
GAT GAT CAG TAT ACC TAA CGC CGC CTR CTR CTA ATA CCG GCG GGT CCC TAT CTA
Leu Leu Val Ile Trp Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly Ile Asp>
___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

     60          70          80          90          100
      *           *           *           *           *
AAG TTT CGA GAA GAA GCT GAA GAG AGG GAC ATC TGC ATA GAT TTC AAT GAG ATG
TTC AAA GCT CTT CTT CGA CTT CTC TCC CTG TAG ACG TAT CTA AAG TTA CTC TAC
Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp Phe Asn Glu Met>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

110         120         130         140         150         160
 *           *           *           *           *           *
ATT TCT CAG TAC TAT ACA CAA AAA GAG CTG GAG TTT ATT GCA GAT ACT ATT CAG
TAA AGA GTC ATG ATA TGT GTT TTT CTC GAC CTC AAA TAA CGT CTA TGA TAA GTC
Ile Ser Gln Tyr Tyr Thr Gln Lys Glu Leu Glu Phe Ile Ala Asp Thr Ile Gln>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

      170         180         190         200         210
       *           *           *           *           *
AAT TCC TCA GCC AAA GTG ATT GTY GTC TTC TCA AAT GGC CCT GAC TTG GAA CCA
TTA AGG AGT CGG TTT CAC TAA CAR CAG AAG AGT TTA CCG GGA CTG AAC CTT GGT
Asn Ser Ser Ala Lys Val Ile Val Val Phe Ser Asn Gly Pro Asp Leu Glu Pro>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

  220         230         240         250         260         270
   *           *           *           *           *           *
CTA ATA CAA GAG ATA GTT CGA CGG AAC ATA ACT GAT AGA ATA TGG CTA GCA AGT
GAT TAT GTT CTC TAT CAA GCT GCC TTG TAT TGA CTA TCT TAT ACC GAT CGT TCA
Leu Ile Gln Glu Ile Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

          280         290         300         310         320
           *           *           *           *           *
GAA GCG TGG GCT AGT TCC TCA CTG ATA GCC AAA CCA GAA TAC TTC CAT GTT GTT
CTT CGC ACC CGA TCA AGG AGT GAC TAT CGG TTT GGT CTT ATG AAG GTA CAA CAA
Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Phe His Val Val>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

    330         340         350         360         370
     *           *           *           *           *
GGT GGA ACC ATT GGA TTT GCA CTA AGA GCA GGA CGC ATC CCA GGA TTC CAT GAG
CCA CCT TGG TAA CCT AAA CGT GAT TCT CGT CCT GCG TAG GGT CCT AAG GTA CTC
Gly Gly Thr Ile Gly Phe Ala Leu Arg Ala Gly Arg Ile Pro Gly Phe His Glu>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

380         390         400         410         420         430
 *           *           *           *           *           *
TTT TTA AAA AAG GTC CAT CCC AGC AGG TCC TCC CAC AAT GGC TTT GTC AAG GAA
AAA AAT TTT TTC CAG GTA GGG TCG TCC AGG AGG GTG TTA CCG AAA CAG TTC CTT
Phe Leu Lys Lys Val His Pro Ser Arg Ser Ser His Asn Gly Phe Val Lys Glu>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

      440         450         460         470         480
       *           *           *           *           *
TTC TGG GAA GAA ACA TTT AAT TGT TAT TTC ACT GAA GAA TCC CTA ACA CAA CTA
AAG ACC CTT CTT TGT AAA TTA ACA ATA AAG TGA CTT CTT AGG GAT TGT GTT GAT
Phe Trp Glu Glu Thr Phe Asn Cys Tyr Phe Thr Glu Glu Ser Leu Thr Gln Leu>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>
```

FIG. 18A

```
  490          500          510          520          530          540
   *            *            *            *            *            *
AAG AAT TGC AAA ACA CCA ACC CAT GGA TTA GCA ATG CAC AAT GAC AGT GCG AAA
TTC TTA ACG TTT TGT GGT TGG GTA CCT AAT CGT TAC GTG TTA CTG TCA CGC TTT
Lys Asn Cys Lys Thr Pro Thr His Gly Leu Ala Met His Asn Asp Ser Ala Lys>
___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

          550          560          570          580          590
           *            *            *            *            *
ATG GGG CAT TCC ACA AGG ACA ACG TTA CGA CCT CCA TGC ACT GGA GAA GAG AAT
TAC CCC GTA AGG TGT TCC TGT TGC AAT GCT GGA GGT ACG TGA CCT CTT CTC TTA
Met Gly His Ser Thr Arg Thr Thr Leu Arg Pro Pro Cys Thr Gly Glu Glu Asn>
___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

    600          610          620          630          640
     *            *            *            *            *
ATC ACG AGT GTG GAG ACC CCT TAC CTG GAT TAT ACT CAC CTC CGT ATT TCA TAT
TAG TGC TCA CAC CTC TGG GGA ATG GAC CTA ATA TGA GTG GAG GCA TAA AGT ATA
Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp Tyr Thr His Leu Arg Ile Ser Tyr>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

650          660          670          680          690          700
 *            *            *            *            *            *
AAT GTG TAT GTG GCA GTG TAT TCG ATT GCT CAC GCT CTG CAG GAC ATC TAT GCC
TTA CAC ATA CAC CGT CAC ATA AGC TAA CGA GTG CGA GAC GTC CTG TAG ATA CGG
Asn Val Tyr Val Ala Val Tyr Ser Ile Ala His Ala Leu Gln Asp Ile Tyr Ala>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

       710          720          730          740          750
        *            *            *            *            *
TGC ACA CCT GGG AAG GGG ATT TTT GCG AAC GGA TCA TGT GCC GAT ATC AAA AAA
ACG TGT GGA CCC TTC CCC TAA AAA CGC TTG CCT AGT ACA CGG CTA TAG TTT TTT
Cys Thr Pro Gly Lys Gly Ile Phe Ala Asn Gly Ser Cys Ala Asp Ile Lys Lys>
___a___a___a___a___a___a___a___a__ORF RF[1] ___a___a___a___a___a___a___a___>

  760          770          780
   *            *            *
GTC GAA GCC TGG AAT CCA TAT GAC TAGT
CAG CTT CGG ACC TTA GGT ATA CTG ATCA
Val Glu Ala Trp Asn Pro Tyr Asp>
___a___a__ORF RF[1] ___a___a___>
```

FIG. 18B

```
tt ctg aca ata ttt gct gtg cta gga ata ctg atc act tcc ttt gtt    47
   Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr Ser Phe Val
    1               5                  10                  15

ttg gga gta ttc att aag ttc aga aat act cct att gtg aaa gcc act    95
Leu Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val Lys Ala Thr
                20                  25                  30

aac aga gaa ctc tcc tat ctc ctc ctc ttc tcc tta atc tgc tgt ttc   143
Asn Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe
            35                  40                  45

tcc agc tca ttg atc ttc att gga gaa ccc aaa gat tgg acc tgc aga   191
Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Lys Asp Trp Thr Cys Arg
        50                  55                  60

ctg cgt caa cct gca ttt gga atc agc ttt gtg ctg tgc att tct tgc   239
Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys
    65                  70                  75

att ctg gtg aaa act aat cgt gtg cta ttg gtc ttt gag gcc aag atc   287
Ile Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile
80                  85                  90                  95

cca act agc ctc cat cga aag tgg gtg ggc ctc aat ttg caa ttc tta   335
Pro Thr Ser Leu His Arg Lys Trp Val Gly Leu Asn Leu Gln Phe Leu
                100                 105                 110

ctg gtt ttc ctc tgt att ctt gtg caa att gtt act tgt gtc atc tgg   383
Leu Val Phe Leu Cys Ile Leu Val Gln Ile Val Thr Cys Val Ile Trp
            115                 120                 125

ctt tac aca gca ccc cct tcg agc tac aga aat cat gaa cta gaa gat   431
Leu Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn His Glu Leu Glu Asp
        130                 135                 140

gaa atc att ttt att aca tgt gat gaa ggt tcc tta atg gca ctt ggt   479
Glu Ile Ile Phe Ile Thr Cys Asp Glu Gly Ser Leu Met Ala Leu Gly
    145                 150                 155

ttt ctc att ggt tac aca tgc ctc ctt gct gcc att tgc ttc ttt ttt   527
Phe Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe
160                 165                 170                 175

gcc ttt aag tct cgc aaa ctc cca gag aac ttc aat gag gcc aaa ttt   575
Ala Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Asn Glu Ala Lys Phe
                180                 185                 190

att acc ttc agc atg ctg ata tt                                   598
Ile Thr Phe Ser Met Leu Ile
            195
```

FIG. 19

```
Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr Ser Phe Val Leu
 1              5                   10                  15
Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
            20                  25                  30
Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
        35                  40                  45
Ser Ser Leu Ile Phe Ile Gly Glu Pro Lys Asp Trp Thr Cys Arg Leu
    50                  55                  60
Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
65                  70                  75                  80
Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro
                85                  90                  95
Thr Ser Leu His Arg Lys Trp Val Gly Leu Asn Leu Gln Phe Leu Leu
            100                 105                 110
Val Phe Leu Cys Ile Leu Val Gln Ile Val Thr Cys Val Ile Trp Leu
        115                 120                 125
Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn His Glu Leu Glu Asp Glu
    130                 135                 140
Ile Ile Phe Ile Thr Cys Asp Glu Gly Ser Leu Met Ala Leu Gly Phe
145                 150                 155                 160
Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala
                165                 170                 175
Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Asn Glu Ala Lys Phe Ile
            180                 185                 190
Thr Phe Ser Met Leu Ile
        195
```

FIG. 20

```
          10          20          30          40          50
           *           *           *           *           *
TT CTG ACA ATA TTT GCT GTG CTA GGA ATA CTG ATC ACT TCC TTT GTT TTG GGA
AA GAC TGT TAT AAA CGA CAC GAT CCT TAT GAC TAG TGA AGG AAA CAA AAC CCT
   Leu Thr Ile Phe Ala Val Leu Gly Ile Leu Ile Thr Ser Phe Val Leu Gly>
   ___a___a___a___a___a___a____ORF RF[3] _a___a___a___a___a___a___a___>

        60          70          80          90         100
         *           *           *           *           *
GTA TTC ATT AAG TTC AGA AAT ACT CCT ATT GTG AAA GCC ACT AAC AGA GAA CTC
CAT AAG TAA TTC AAG TCT TTA TGA GGA TAA CAC TTT CGG TGA TTG TCT CTT GAG
Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

110         120         130         140         150         160
  *           *           *           *           *           *
TCC TAT CTC CTC CTC TTC TCC TTA ATC TGC TGT TTC TCC AGC TCA TTG ATC TTC
AGG ATA GAG GAG GAG AAG AGG AAT TAG ACG ACA AAG AGG TCG AGT AAC TAG AAG
Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu Ile Phe>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

        170         180         190         200         210
         *           *           *           *           *
ATT GGA GAA CCC AAA GAT TGG ACC TGC AGA CTG CGT CAA CCT GCA TTT GGA ATC
TAA CCT CTT GGG TTT CTA ACC TGG ACG TCT GAC GCA GTT GGA CGT AAA CCT TAG
Ile Gly Glu Pro Lys Asp Trp Thr Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

    220         230         240         250         260
     *           *           *           *           *
AGC TTT GTG CTG TGC ATT TCT TGC ATT CTG GTG AAA ACT AAT CGT GTG CTA TTG
TCG AAA CAC GAC ACG TAA AGA ACG TAA GAC CAC TTT TGA TTA GCA CAC GAT AAC
Ser Phe Val Leu Cys Ile Ser Cys Ile Leu Val Lys Thr Asn Arg Val Leu Leu>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

270         280         290         300         310         320
 *           *           *           *           *           *
GTC TTT GAG GCC AAG ATC CCA ACT AGC CTC CAT CGA AAG TGG GTG GGC CTC AAT
CAG AAA CTC CGG TTC TAG GGT TGA TCG GAG GTA GCT TTC ACC CAC CCG GAG TTA
Val Phe Glu Ala Lys Ile Pro Thr Ser Leu His Arg Lys Trp Val Gly Leu Asn>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

        330         340         350         360         370
         *           *           *           *           *
TTG CAA TTC TTA CTG GTT TTC CTC TGT ATT CTT GTG CAA ATT GTT ACT TGT GTC
AAC GTT AAG AAT GAC CAA AAG GAG ACA TAA GAA CAC GTT TAA CAA TGA ACA CAG
Leu Gln Phe Leu Leu Val Phe Leu Cys Ile Leu Val Gln Ile Val Thr Cys Val>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

380         390         400         410         420         430
  *           *           *           *           *           *
ATC TGG CTT TAC ACA GCA CCC CCT TCG AGC TAC AGA AAT CAT GAA CTA GAA GAT
TAG ACC GAA ATG TGT CGT GGG GGA AGC TCG ATG TCT TTA GTA CTT GAT CTT CTA
Ile Trp Leu Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn His Glu Leu Glu Asp>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

        440         450         460         470         480
         *           *           *           *           *
GAA ATC ATT TTT ATT ACA TGT GAT GAA GGT TCC TTA ATG GCA CTT GGT TTT CTC
CTT TAG TAA AAA TAA TGT ACA CTA CTT CCA AGG AAT TAC CGT GAA CCA AAA GAG
Glu Ile Ile Phe Ile Thr Cys Asp Glu Gly Ser Leu Met Ala Leu Gly Phe Leu>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>
```

FIG. 21A

```
   490          500          510          520          530
    *            *            *            *            *
ATT GGT TAC ACA TGC CTC CTT GCT GCC ATT TGC TTC TTT TTT GCC TTT AAG TCT
TAA CCA ATG TGT ACG GAG GAA CGA CGG TAA ACG AAG AAA AAA CGG AAA TTC AGA
Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala Phe Lys Ser>
___a___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

540          550          560          570          580          590
 *            *            *            *            *            *
CGC AAA CTC CCA GAG AAC TTC AAT GAG GCC AAA TTT ATT ACC TTC AGC ATG CTG
GCG TTT GAG GGT CTC TTG AAG TTA CTC CGG TTT AAA TAA TGG AAG TCG TAC GAC
Arg Lys Leu Pro Glu Asn Phe Asn Glu Ala Lys Phe Ile Thr Phe Ser Met Leu>
___a___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

ATA TT
TAT AA
Ile>
___>
```

FIG. 21B

```
g ttg acc ata tgt gca gtg ctg ggt gtt gcc ytg acg ggc ttc gtg atg 49
  Leu Thr Ile Cys Ala Val Leu Gly Val Ala Xaa Thr Gly Phe Val Met
   1               5                  10                  15

gcc gtc ttt gtc cga ttc cgc aac acc cca ata gtg aaa gcc acg aac   97
Ala Val Phe Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
            20                  25                  30

cga gaa ctg tcc tac gtc ctc ctg ttc tct ctc atc tgt tgc ttc tcc  145
Arg Glu Leu Ser Tyr Val Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
        35                  40                  45

agc tcc ctc atc ttc ata gga gag ccg cag gat tgg atg tgc cgc tta  193
Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Met Cys Arg Leu
    50                  55                  60

cgc caa ccg gcc ttt ggg atc agt ttt gtt ctc tgt atc tcg tgc atc  241
Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
65                  70                  75                  80

ctt gtg aaa aca aac cka gtc ctc ttg gtg ttt gaa gcc aag atc ccg  289
Leu Val Lys Thr Asn Xaa Val Leu Leu Val Phe Glu Ala Lys Ile Pro
                85                  90                  95

aca agt ctc cat cgt aaa tgg tgg ggg tta aac cta cag ttc ctg ctg  337
Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu
            100                 105                 110

gtg ttt ctg tgc aca ttt gtc caa gtc atg ata tgt gtg gtc tgg ctg  385
Val Phe Leu Cys Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu
        115                 120                 125

tac aac gcc cca cct tcc agt tac agg aat tat gac ata gat gag atg  433
Tyr Asn Ala Pro Pro Ser Ser Tyr Arg Asn Tyr Asp Ile Asp Glu Met
    130                 135                 140

att ttt atc aca tgt aat gaa ggc tct gta atg gct ctt ggg ttt ctt  481
Ile Phe Ile Thr Cys Asn Glu Gly Ser Val Met Ala Leu Gly Phe Leu
145                 150                 155                 160

att ggc tat aca tgc ctg ctg gcc gct ata tgt ttc ttc ttt gca ttc  529
Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala Phe
                165                 170                 175

aaa tca cgg aaa ctt cca gaa aac ttc acc gag gct aag ttc atc act   577

Lys Ser Arg Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile Thr
            180                 185                 190

ttt agt atg ctc ata tt                                          594
Phe Ser Met Leu Ile
        195
```

FIG. 22

```
Leu Thr Ile Cys Ala Val Leu Gly Val Ala Leu Thr Gly Phe Val Met
 1               5                  10                  15
Ala Val Phe Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
            20                  25                  30
Arg Glu Leu Ser Tyr Val Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
        35                  40                  45
Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Met Cys Arg Leu
    50                  55                  60
Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
65                  70                  75                  80
Leu Val Lys Thr Asn Xaa Val Leu Leu Val Phe Glu Ala Lys Ile Pro
                85                  90                  95
Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu
            100                 105                 110
Val Phe Leu Cys Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu
        115                 120                 125
Tyr Asn Ala Pro Pro Ser Ser Tyr Arg Asn Tyr Asp Ile Asp Glu Met
    130                 135                 140
Ile Phe Ile Thr Cys Asn Glu Gly Ser Val Met Ala Leu Gly Phe Leu
145                 150                 155                 160
Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala Phe
                165                 170                 175
Lys Ser Arg Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile Thr
            180                 185                 190
Phe Ser Met Leu Ile
        195
```


FIG. 23

```
          10                  20                  30                  40                  50
           *                   *                   *                   *                   *
G TTG ACC ATA TGT GCA GTG CTG GGT GTT GCC YTG ACG GGC TTC GTG ATG GCC
C AAC TGG TAT ACA CGT CAC GAC CCA CAA CGG RAC TGC CCG AAG CAC TAC CGG
  Leu Thr Ile Cys Ala Val Leu Gly Val Ala Leu Thr Gly Phe Val Met Ala>
  ___a___a___a___a___a___a____ORF RF[2] _a___a___a___a___a___a___a___>

        60                  70                  80                  90                 100
         *                   *                   *                   *                   *
GTC TTT GTC CGA TTC CGC AAC ACC CCA ATA GTG AAA GCC ACG AAC CGA GAA CTG
CAG AAA CAG GCT AAG GCG TTG TGG GGT TAT CAC TTT CGG TGC TTG GCT CTT GAC
Val Phe Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

  110                 120                 130                 140                 150                 160
    *                   *                   *                   *                   *                   *
TCC TAC GTC CTC CTG TTC TCT CTC ATC TGT TGC TTC TCC AGC TCC CTC ATC TTC
AGG ATG CAG GAG GAC AAG AGA GAG TAG ACA ACG AAG AGG TCG AGG GAG TAG AAG
Ser Tyr Val Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu Ile Phe>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

         170                 180                 190                 200                 210
           *                   *                   *                   *                   *
ATA GGA GAG CCG CAG GAT TGG ATG TGC CGC TTA CGC CAA CCG GCC TTT GGG ATC
TAT CCT CTC GGC GTC CTA ACC TAC ACG GCG AAT GCG GTT GGC CGG AAA CCC TAG
Ile Gly Glu Pro Gln Asp Trp Met Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

    220                 230                 240                 250                 260
      *                   *                   *                   *                   *
AGT TTT GTT CTC TGT ATC TCG TGC ATC CTT GTG AAA ACA AAC CKA GTC CTC TTG
TCA AAA CAA GAG ACA TAG AGC ACG TAG GAA CAC TTT TGT TTG GMT CAG GAG AAC
Ser Phe Val Leu Cys Ile Ser Cys Ile Leu Val Lys Thr Asn Xxx Val Leu Leu>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

270                 280                 290                 300                 310                 320
  *                   *                   *                   *                   *                   *
GTG TTT GAA GCC AAG ATC CCG ACA AGT CTC CAT CGT AAA TGG TGG GGG TTA AAC
CAC AAA CTT CGG TTC TAG GGC TGT TCA GAG GTA GCA TTT ACC ACC CCC AAT TTG
Val Phe Glu Ala Lys Ile Pro Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

       330                 340                 350                 360                 370
         *                   *                   *                   *                   *
CTA CAG TTC CTG CTG GTG TTT CTG TGC ACA TTT GTC CAA GTC ATG ATA TGT GTG
GAT GTC AAG GAC GAC CAC AAA GAC ACG TGT AAA CAG GTT CAG TAC TAT ACA CAC
Leu Gln Phe Leu Leu Val Phe Leu Cys Thr Phe Val Gln Val Met Ile Cys Val>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

  380                 390                 400                 410                 420                 430
    *                   *                   *                   *                   *                   *
GTC TGG CTG TAC AAC GCC CCA CCT TCC AGT TAC AGG AAT TAT GAC ATA GAT GAG
CAG ACC GAC ATG TTG CGG GGT GGA AGG TCA ATG TCC TTA ATA CTG TAT CTA CTC
Val Trp Leu Tyr Asn Ala Pro Pro Ser Ser Tyr Arg Asn Tyr Asp Ile Asp Glu>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

          440                 450                 460                 470                 480
            *                   *                   *                   *                   *
ATG ATT TTT ATC ACA TGT AAT GAA GGC TCT GTA ATG GCT CTT GGG TTT CTT ATT
TAC TAA AAA TAG TGT ACA TTA CTT CCG AGA CAT TAC CGA GAA CCC AAA GAA TAA
Met Ile Phe Ile Thr Cys Asn Glu Gly Ser Val Met Ala Leu Gly Phe Leu Ile>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>
```

FIG. 24A

```
     490           500           510           520           530
      *             *             *             *             *
GGC TAT ACA TGC CTG CTG GCC GCT ATA TGT TTC TTC TTT GCA TTC AAA TCA CGG
CCG ATA TGT ACG GAC GAC CGG CGA TAT ACA AAG AAG AAA CGT AAG TTT AGT GCC
Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala Phe Lys Ser Arg>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

540           550           560           570           580           590
 *             *             *             *             *             *
AAA CTT CCA GAA AAC TTC ACC GAG GCT AAG TTC ATC ACT TTT AGT ATG CTC ATA
TTT GAA GGT CTT TTG AAG TGG CTC CGA TTC AAG TAG TGA AAA TCA TAC GAG TAT
Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile Thr Phe Ser Met Leu Ile>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

TT
AA
```


FIG. 24B

```
tg tcg tgg acg gag ccc ttt ggg atc gcg ttg gcc ata tgt gca gcg    47
   Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile Cys Ala Ala
    1               5                  10                  15

ctg ggt gtt gcc ttg acg ggc ttc gtg atg gcc gtc ttt atc aga ttc    95
Leu Gly Val Ala Leu Thr Gly Phe Val Met Ala Val Phe Ile Arg Phe
                20                  25                  30

cgc aac acc cca ata gtg aag gcc acg aac cga gaa ctg tcc tat gtc   143
Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu Ser Tyr Val
            35                  40                  45

ctc ctg ttc tct ctc atc tgt tgc ttc tcc agt tcc ctc atc ttt att   191
Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile
        50                  55                  60

gga gag ccg cag gat tgg atg tgt cgt tta cgc caa cct gcc ttt ggg   239
Gly Glu Pro Gln Asp Trp Met Cys Arg Leu Arg Gln Pro Ala Phe Gly
    65                  70                  75

atc agt ttt gtt ctc tgt atc tcc tgc atc ctt gtg aaa act aat aga   287
Ile Ser Phe Val Leu Cys Ile Ser Cys Ile Leu Val Lys Thr Asn Arg
80                  85                  90                  95

gta ctc tta gta ttt gaa gcc aag atc ccc aca agt ctc cat cgt aaa   335
Val Leu Leu Val Phe Glu Ala Lys Ile Pro Thr Ser Leu His Arg Lys
                100                 105                 110

tgg tgg ggg tta aac ctt cag ttt ttg ctg gtg ttt ctg tgc aca ttt   383
Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu Val Phe Leu Cys Thr Phe
            115                 120                 125

gtc caa gtc atg atc tgt gtt gtc tgg ctg tac aat gcc cct ccc tcc   431
Val Gln Val Met Ile Cys Val Val Trp Leu Tyr Asn Ala Pro Pro Ser
        130                 135                 140

agt tac agg aat tat gac ata gat gag atg att ttt atc aca           473
Ser Tyr Arg Asn Tyr Asp Ile Asp Glu Met Ile Phe Ile Thr
    145                 150                 155

tg                                                                475
```


FIG. 25

```
Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile Cys Ala Ala Leu
 1               5                  10                  15
Gly Val Ala Leu Thr Gly Phe Val Met Ala Val Phe Ile Arg Phe Arg
            20                  25                  30
Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu Ser Tyr Val Leu
        35                  40                  45
Leu Phe Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly
    50                  55                  60
Glu Pro Gln Asp Trp Met Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile
65                  70                  75                  80
Ser Phe Val Leu Cys Ile Ser Cys Ile Leu Val Lys Thr Asn Arg Val
                85                  90                  95
Leu Leu Val Phe Glu Ala Lys Ile Pro Thr Ser Leu His Arg Lys Trp
            100                 105                 110
Trp Gly Leu Asn Leu Gln Phe Leu Leu Val Phe Leu Cys Thr Phe Val
        115                 120                 125
Gln Val Met Ile Cys Val Val Trp Leu Tyr Asn Ala Pro Pro Ser Ser
    130                 135                 140
Tyr Arg Asn Tyr Asp Ile Asp Glu Met Ile Phe Ile Thr
145                 150                 155
```


FIG. 26

```
              10         20         30         40         50
               *          *          *          *          *
TG TCG TGG ACG GAG CCC TTT GGG ATC GCG TTG GCC ATA TGT GCA GCG CTG GGT
AC AGC ACC TGC CTC GGG AAA CCC TAG CGC AAC CGG TAT ACA CGT CGC GAC CCA
   Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile Cys Ala Ala Leu Gly>
   ___a___a___a___a___a___a____ORF RF[3] _a___a___a___a___a___a___a___>

        60         70         80         90        100
         *          *          *          *          *
GTT GCC TTG ACG GGC TTC GTG ATG GCC GTC TTT ATC AGA TTC CGC AAC ACC CCA
CAA CGG AAC TGC CCG AAG CAC TAC CGG CAG AAA TAG TCT AAG GCG TTG TGG GGT
Val Ala Leu Thr Gly Phe Val Met Ala Val Phe Ile Arg Phe Arg Asn Thr Pro>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

110        120        130        140        150        160
 *          *          *          *          *          *
ATA GTG AAG GCC ACG AAC CGA GAA CTG TCC TAT GTC CTC CTG TTC TCT CTC ATC
TAT CAC TTC CGG TGC TTG GCT CTT GAC AGG ATA CAG GAG GAC AAG AGA GAG TAG
Ile Val Lys Ala Thr Asn Arg Glu Leu Ser Tyr Val Leu Leu Phe Ser Leu Ile>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

        170        180        190        200        210
         *          *          *          *          *
TGT TGC TTC TCC AGT TCC CTC ATC TTT ATT GGA GAG CCG CAG GAT TGG ATG TGT
ACA ACG AAG AGG TCA AGG GAG TAG AAA TAA CCT CTC GGC GTC CTA ACC TAC ACA
Cys Cys Phe Ser Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Met Cys>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

    220        230        240        250        260
     *          *          *          *          *
CGT TTA CGC CAA CCT GCC TTT GGG ATC AGT TTT GTT CTC TGT ATC TCC TGC ATC
GCA AAT GCG GTT GGA CGG AAA CCC TAG TCA AAA CAA GAG ACA TAG AGG ACG TAG
Arg Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

270        280        290        300        310        320
 *          *          *          *          *          *
CTT GTG AAA ACT AAT AGA GTA CTC TTA GTA TTT GAA GCC AAG ATC CCC ACA AGT
GAA CAC TTT TGA TTA TCT CAT GAG AAT CAT AAA CTT CGG TTC TAG GGG TGT TCA
Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro Thr Ser>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

      330        340        350        360        370
       *          *          *          *          *
CTC CAT CGT AAA TGG TGG GGG TTA AAC CTT CAG TTT TTG CTG GTG TTT CTG TGC
GAG GTA GCA TTT ACC ACC CCC AAT TTG GAA GTC AAA AAC GAC CAC AAA GAC ACG
Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu Val Phe Leu Cys>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

380        390        400        410        420        430
 *          *          *          *          *          *
ACA TTT GTC CAA GTC ATG ATC TGT GTT GTC TGG CTG TAC AAT GCC CCT CCC TCC
TGT AAA CAG GTT CAG TAC TAG ACA CAA CAG ACC GAC ATG TTA CGG GGA GGG AGG
Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu Tyr Asn Ala Pro Pro Ser>
___a___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___a___a___>

        440        450        460        470
         *          *          *          *
AGT TAC AGG AAT TAT GAC ATA GAT GAG ATG ATT TTT ATC ACA TG
TCA ATG TCC TTA ATA CTG TAT CTA CTC TAC TAA AAA TAG TGT AC
Ser Tyr Arg Asn Tyr Asp Ile Asp Glu Met Ile Phe Ile Thr>
___a___a___a___a___a___a__ORF RF[3] ___a___a___a___a___a___>
```

FIG. 27

```
a cgc cca ggg att gaa aaa ttt gag aag gag atg gag gag cga gac atc 49
  Arg Pro Gly Ile Glu Lys Phe Glu Lys Glu Met Glu Glu Arg Asp Ile
   1               5                  10                  15

tgc att cac ctt aat gaa ctt atc tct cag tat ttt gag gay cat gaa   97
Cys Ile His Leu Asn Glu Leu Ile Ser Gln Tyr Phe Glu Asp His Glu
             20                  25                  30

atc caa gcg ctg gct gac agg att gag aac tcc aca gct aaa gtc atc   145
Ile Gln Ala Leu Ala Asp Arg Ile Glu Asn Ser Thr Ala Lys Val Ile
         35                  40                  45

gta gtg ttt gcc agc ggc cca gat atc gag cct tta atc aaa gag atg   193
Val Val Phe Ala Ser Gly Pro Asp Ile Glu Pro Leu Ile Lys Glu Met
     50                  55                  60

gtg agg aga aac atc aca gac cgt atc tgg tta gcc agt gaa gcg tgg   241
Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser Glu Ala Trp
 65                  70                  75                  80

gct agc tcc tct ctt ata gct aaa cca gag tat ctt gat gtt gtg gct   289
Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Leu Asp Val Val Ala
                 85                  90                  95

ggg act atc ggc ttt gct ctc aag gca ggg cat att cct ggc tta aga   337
Gly Thr Ile Gly Phe Ala Leu Lys Ala Gly His Ile Pro Gly Leu Arg
            100                 105                 110

gag ttc cta cag caa gtg caa cca aag aga gac agt cat aat gaa ttt   385
Glu Phe Leu Gln Gln Val Gln Pro Lys Arg Asp Ser His Asn Glu Phe
        115                 120                 125

gtc agg gag ttt tgg gaa gaa acc ttc aac tgt tat ctg gaa gac agc   433
Val Arg Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr Leu Glu Asp Ser
    130                 135                 140

cag aga cag cag gaa agt gag aat ggc agc aca agt ttc agg cct ttg   481
Gln Arg Gln Gln Glu Ser Glu Asn Gly Ser Thr Ser Phe Arg Pro Leu
145                 150                 155                 160

tgt act ggt gag gaa gac atc aca agt gtt gag acc ccg tac ttg gac   529
Cys Thr Gly Glu Glu Asp Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp
                165                 170                 175

tac aca cac ttt cgt atc tcc tat aac gtg tat gtt gca gtt tat tcc   577
Tyr Thr His Phe Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser
            180                 185                 190

att gca cag gcc ctg cag gac ata ctc acc tgc aca cct gga cat gga   625
Ile Ala Gln Ala Leu Gln Asp Ile Leu Thr Cys Thr Pro Gly His Gly
        195                 200                 205

ctc ttt gcc aac aat tcc tgt gcc gat ata aag aaa atg gaa gca tgg   673
Leu Phe Ala Asn Asn Ser Cys Ala Asp Ile Lys Lys Met Glu Ala Trp
    210                 215                 220
```

FIG. 28A

```
cag gcc ctg aag cag ctt aga cat ttg aac tac acc aac agc atg ggg   721
Gln Ala Leu Lys Gln Leu Arg His Leu Asn Tyr Thr Asn Ser Met Gly
225                 230                 235                 240

gaa aag atg cac ttt gat gag aac tca gac atg gca tca aac tac acc   769
Glu Lys Met His Phe Asp Glu Asn Ser Asp Met Ala Ser Asn Tyr Thr
                245                 250                 255

att ata aac tgg cac cgg tct gct gag gat ggc tct gtg gtg ttt gag   817
Ile Ile Asn Trp His Arg Ser Ala Glu Asp Gly Ser Val Val Phe Glu
            260                 265                 270

gac gtg gga tac tac agc atg cac gtc aag aga gga gcc aaa ctg ttc   865
Asp Val Gly Tyr Tyr Ser Met His Val Lys Arg Gly Ala Lys Leu Phe
        275                 280                 285

att gac aag aca aag att ttg tgg aat gga tac agt tcg gag gcg cca   913
Ile Asp Lys Thr Lys Ile Leu Trp Asn Gly Tyr Ser Ser Glu Ala Pro
    290                 295                 300

ttc tct aat tgc agt gag gac tgt gaa cct ggt aca agg aag ggg atc   961
Phe Ser Asn Cys Ser Glu Asp Cys Glu Pro Gly Thr Arg Lys Gly Ile
305                 310                 315                 320

att gac agt atg ccc aca tgt tgc ttt gaa tgc act gag tgc tca gat   1009
Ile Asp Ser Met Pro Thr Cys Cys Phe Glu Cys Thr Glu Cys Ser Asp
                325                 330                 335

gga gag tac agt aat cat aaa gat gcc agt gtt tgc acc aag tgt cca   1057
Gly Glu Tyr Ser Asn His Lys Asp Ala Ser Val Cys Thr Lys Cys Pro
            340                 345                 350

tat aac tct tgg tcc aat ggg aat cac aca ttc tgc ttc ctg aag gaa   1105
Tyr Asn Ser Trp Ser Asn Gly Asn His Thr Phe Cys Phe Leu Lys Glu
        355                 360                 365

atc gag ttt ctc tcc tgg aca gaa cca ttc ggg ata gct ttg gcc ata   1153
Ile Glu Phe Leu Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile
    370                 375                 380

tgt gca gta ctg ggt gtg ctc ttg aca gct ttt gtg atc gga gtc ttt   1201
Cys Ala Val Leu Gly Val Leu Leu Thr Ala Phe Val Ile Gly Val Phe
385                 390                 395                 400

gtc aga ttc cgc aac acc cca ata gtg aag gcc aca aac cga gaa ctg   1249
Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu
                405                 410                 415

tcc tac gtt ctc ctg twc tca ctt atc tgt tgc ttc tca agc tcc ctc   1297
Ser Tyr Val Leu Leu Xaa Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu
            420                 425                 430

akc ttc atc gg                                                   1308
Xaa Phe Ile
        435
```

FIG. 28B

Docket No.: 2856.1001-011
Title: "Polycation-Sensing Receptor ..."
Inventors: H. William Harris, *et al.*

```
Arg Pro Gly Ile Glu Lys Phe Glu Lys Glu Met Glu Glu Arg Asp Ile
 1               5                  10                  15
Cys Ile His Leu Asn Glu Leu Ile Ser Gln Tyr Phe Glu Asp His Glu
            20                  25                  30
Ile Gln Ala Leu Ala Asp Arg Ile Glu Asn Ser Thr Ala Lys Val Ile
        35                  40                  45
Val Val Phe Ala Ser Gly Pro Asp Ile Glu Pro Leu Ile Lys Glu Met
    50                  55                  60
Val Arg Arg Asn Ile Thr Asp Arg Ile Trp Leu Ala Ser Glu Ala Trp
65                  70                  75                  80
Ala Ser Ser Ser Leu Ile Ala Lys Pro Glu Tyr Leu Asp Val Val Ala
                85                  90                  95
Gly Thr Ile Gly Phe Ala Leu Lys Ala Gly His Ile Pro Gly Leu Arg
            100                 105                 110
Glu Phe Leu Gln Gln Val Gln Pro Lys Arg Asp Ser His Asn Glu Phe
        115                 120                 125
Val Arg Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr Leu Glu Asp Ser
    130                 135                 140
Gln Arg Gln Gln Glu Ser Glu Asn Gly Ser Thr Ser Phe Arg Pro Leu
145                 150                 155                 160
Cys Thr Gly Glu Glu Asp Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp
                165                 170                 175
Tyr Thr His Phe Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser
            180                 185                 190
Ile Ala Gln Ala Leu Gln Asp Ile Leu Thr Cys Thr Pro Gly His Gly
        195                 200                 205
Leu Phe Ala Asn Asn Ser Cys Ala Asp Ile Lys Lys Met Glu Ala Trp
    210                 215                 220
Gln Ala Leu Lys Gln Leu Arg His Leu Asn Tyr Thr Asn Ser Met Gly
225                 230                 235                 240
Glu Lys Met His Phe Asp Glu Asn Ser Asp Met Ala Ser Asn Tyr Thr
                245                 250                 255
Ile Ile Asn Trp His Arg Ser Ala Glu Asp Gly Ser Val Val Phe Glu
            260                 265                 270
Asp Val Gly Tyr Tyr Ser Met His Val Lys Arg Gly Ala Lys Leu Phe
        275                 280                 285
Ile Asp Lys Thr Lys Ile Leu Trp Asn Gly Tyr Ser Ser Glu Ala Pro
    290                 295                 300
Phe Ser Asn Cys Ser Glu Asp Cys Glu Pro Gly Thr Arg Lys Gly Ile
305                 310                 315                 320
Ile Asp Ser Met Pro Thr Cys Cys Phe Glu Cys Thr Glu Cys Ser Asp
                325                 330                 335
Gly Glu Tyr Ser Asn His Lys Asp Ala Ser Val Cys Thr Lys Cys Pro
            340                 345                 350
Tyr Asn Ser Trp Ser Asn Gly Asn His Thr Phe Cys Phe Leu Lys Glu
        355                 360                 365
Ile Glu Phe Leu Ser Trp Thr Glu Pro Phe Gly Ile Ala Leu Ala Ile
    370                 375                 380
Cys Ala Val Leu Gly Val Leu Leu Thr Ala Phe Val Ile Gly Val Phe
385                 390                 395                 400
Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn Arg Glu Leu
                405                 410                 415
Ser Tyr Val Leu Leu Xaa Ser Leu Ile Cys Cys Phe Ser Ser Ser Leu
            420                 425                 430
Xaa Phe Ile
        435
```

FIG. 29

```
          10          20          30          40          50
           *           *           *           *           *
A CGC CCA GGG ATT GAA AAA TTT GAG AAG GAG ATG GAG GAG CGA GAC ATC TGC
T GCG GGT CCC TAA CTT TTT AAA CTC TTC CTC TAC CTC CTC GCT CTG TAG ACG
  Arg Pro Gly Ile Glu Lys Phe Glu Lys Glu Met Glu Glu Arg Asp Ile Cys>
   ___a___a___a___a___a___a____ORF RF[2] _a___a___a___a___a___a___a___>

        60          70          80          90         100
         *           *           *           *           *
ATT CAC CTT AAT GAA CTT ATC TCT CAG TAT TTT GAG GAY CAT GAA ATC CAA GCG
TAA GTG GAA TTA CTT GAA TAG AGA GTC ATA AAA CTC CTR GTA CTT TAG GTT CGC
Ile His Leu Asn Glu Leu Ile Ser Gln Tyr Phe Glu Asp His Glu Ile Gln Ala>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

  110         120         130         140         150         160
   *           *           *           *           *           *
CTG GCT GAC AGG ATT GAG AAC TCC ACA GCT AAA GTC ATC GTA GTG TTT GCC AGC
GAC CGA CTG TCC TAA CTC TTG AGG TGT CGA TTT CAG TAG CAT CAC AAA CGG TCG
Leu Ala Asp Arg Ile Glu Asn Ser Thr Ala Lys Val Ile Val Val Phe Ala Ser>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

          170         180         190         200         210
           *           *           *           *           *
GGC CCA GAT ATC GAG CCT TTA ATC AAA GAG ATG GTG AGG AGA AAC ATC ACA GAC
CCG GGT CTA TAG CTC GGA AAT TAG TTT CTC TAC CAC TCC TCT TTG TAG TGT CTG
Gly Pro Asp Ile Glu Pro Leu Ile Lys Glu Met Val Arg Arg Asn Ile Thr Asp>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

     220         230         240         250         260
      *           *           *           *           *
CGT ATC TGG TTA GCC AGT GAA GCG TGG GCT AGC TCC TCT CTT ATA GCT AAA CCA
GCA TAG ACC AAT CGG TCA CTT CGC ACC CGA TCG AGG AGA GAA TAT CGA TTT GGT
Arg Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser Ser Leu Ile Ala Lys Pro>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

270         280         290         300         310         320
 *           *           *           *           *           *
GAG TAT CTT GAT GTT GTG GCT GGG ACT ATC GGC TTT GCT CTC AAG GCA GGG CAT
CTC ATA GAA CTA CAA CAC CGA CCC TGA TAG CCG AAA CGA GAG TTC CGT CCC GTA
Glu Tyr Leu Asp Val Val Ala Gly Thr Ile Gly Phe Ala Leu Lys Ala Gly His>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

        330         340         350         360         370
         *           *           *           *           *
ATT CCT GGC TTA AGA GAG TTC CTA CAG CAA GTG CAA CCA AAG AGA GAC AGT CAT
TAA GGA CCG AAT TCT CTC AAG GAT GTC GTT CAC GTT GGT TTC TCT CTG TCA GTA
Ile Pro Gly Leu Arg Glu Phe Leu Gln Gln Val Gln Pro Lys Arg Asp Ser His>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

  380         390         400         410         420         430
   *           *           *           *           *           *
AAT GAA TTT GTC AGG GAG TTT TGG GAA GAA ACC TTC AAC TGT TAT CTG GAA GAC
TTA CTT AAA CAG TCC CTC AAA ACC CTT CTT TGG AAG TTG ACA ATA GAC CTT CTG
Asn Glu Phe Val Arg Glu Phe Trp Glu Glu Thr Phe Asn Cys Tyr Leu Glu Asp>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

          440         450         460         470         480
           *           *           *           *           *
AGC CAG AGA CAG CAG GAA AGT GAG AAT GGC AGC ACA AGT TTC AGG CCT TTG TGT
TCG GTC TCT GTC GTC CTT TCA CTC TTA CCG TCG TGT TCA AAG TCC GGA AAC ACA
Ser Gln Arg Gln Gln Glu Ser Glu Asn Gly Ser Thr Ser Phe Arg Pro Leu Cys>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>
```

FIG. 30A

```
    490         500         510         520         530
     *           *           *           *           *
ACT GGT GAG GAA GAC ATC ACA AGT GTT GAG ACC CCG TAC TTG GAC TAC ACA CAC
TGA CCA CTC CTT CTG TAG TGT TCA CAA CTC TGG GGC ATG AAC CTG ATG TGT GTG
Thr Gly Glu Glu Asp Ile Thr Ser Val Glu Thr Pro Tyr Leu Asp Tyr Thr His>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

540         550         560         570         580         590
 *           *           *           *           *           *
TTT CGT ATC TCC TAT AAC GTG TAT GTT GCA GTT TAT TCC ATT GCA CAG GCC CTG
AAA GCA TAG AGG ATA TTG CAC ATA CAA CGT CAA ATA AGG TAA CGT GTC CGG GAC
Phe Arg Ile Ser Tyr Asn Val Tyr Val Ala Val Tyr Ser Ile Ala Gln Ala Leu>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

      600         610         620         630         640
       *           *           *           *           *
CAG GAC ATA CTC ACC TGC ACA CCT GGA CAT GGA CTC TTT GCC AAC AAT TCC TGT
GTC CTG TAT GAG TGG ACG TGT GGA CCT GTA CCT GAG AAA CGG TTG TTA AGG ACA
Gln Asp Ile Leu Thr Cys Thr Pro Gly His Gly Leu Phe Ala Asn Asn Ser Cys>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

  650         660         670         680         690         700
   *           *           *           *           *           *
GCC GAT ATA AAG AAA ATG GAA GCA TGG CAG GCC CTG AAG CAG CTT AGA CAT TTG
CGG CTA TAT TTC TTT TAC CTT CGT ACC GTC CGG GAC TTC GTC GAA TCT GTA AAC
Ala Asp Ile Lys Lys Met Glu Ala Trp Gln Ala Leu Lys Gln Leu Arg His Leu>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

          710         720         730         740         750
           *           *           *           *           *
AAC TAC ACC AAC AGC ATG GGG GAA AAG ATG CAC TTT GAT GAG AAC TCA GAC ATG
TTG ATG TGG TTG TCG TAC CCC CTT TTC TAC GTG AAA CTA CTC TTG AGT CTG TAC
Asn Tyr Thr Asn Ser Met Gly Glu Lys Met His Phe Asp Glu Asn Ser Asp Met>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

    760         770         780         790         800
     *           *           *           *           *
GCA TCA AAC TAC ACC ATT ATA AAC TGG CAC CGG TCT GCT GAG GAT GGC TCT GTG
CGT AGT TTG ATG TGG TAA TAT TTG ACC GTG GCC AGA CGA CTC CTA CCG AGA CAC
Ala Ser Asn Tyr Thr Ile Ile Asn Trp His Arg Ser Ala Glu Asp Gly Ser Val>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

810         820         830         840         850         860
 *           *           *           *           *           *
GTG TTT GAG GAC GTG GGA TAC TAC AGC ATG CAC GTC AAG AGA GGA GCC AAA CTG
CAC AAA CTC CTG CAC CCT ATG ATG TCG TAC GTG CAG TTC TCT CCT CGG TTT GAC
Val Phe Glu Asp Val Gly Tyr Tyr Ser Met His Val Lys Arg Gly Ala Lys Leu>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

      870         880         890         900         910
       *           *           *           *           *
TTC ATT GAC AAG ACA AAG ATT TTG TGG AAT GGA TAC AGT TCG GAG GCG CCA TTC
AAG TAA CTG TTC TGT TTC TAA AAC ACC TTA CCT ATG TCA AGC CTC CGC GGT AAG
Phe Ile Asp Lys Thr Lys Ile Leu Trp Asn Gly Tyr Ser Ser Glu Ala Pro Phe>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

  920         930         940         950         960         970
   *           *           *           *           *           *
TCT AAT TGC AGT GAG GAC TGT GAA CCT GGT ACA AGG AAG GGG ATC ATT GAC AGT
AGA TTA ACG TCA CTC CTG ACA CTT GGA CCA TGT TCC TTC CCC TAG TAA CTG TCA
Ser Asn Cys Ser Glu Asp Cys Glu Pro Gly Thr Arg Lys Gly Ile Ile Asp Ser>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>
```

FIG. 30B

```
          980          990          1000         1010         1020
            *            *            *            *            *
ATG CCC ACA TGT TGC TTT GAA TGC ACT GAG TGC TCA GAT GGA GAG TAC AGT AAT
TAC GGG TGT ACA ACG AAA CTT ACG TGA CTC ACG AGT CTA CCT CTC ATG TCA TTA
Met Pro Thr Cys Cys Phe Glu Cys Thr Glu Cys Ser Asp Gly Glu Tyr Ser Asn>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

   1030         1040         1050         1060         1070
     *            *            *            *            *
CAT AAA GAT GCC AGT GTT TGC ACC AAG TGT CCA TAT AAC TCT TGG TCC AAT GGG
GTA TTT CTA CGG TCA CAA ACG TGG TTC ACA GGT ATA TTG AGA ACC AGG TTA CCC
His Lys Asp Ala Ser Val Cys Thr Lys Cys Pro Tyr Asn Ser Trp Ser Asn Gly>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

1080         1090         1100         1110         1120         1130
  *            *            *            *            *            *
AAT CAC ACA TTC TGC TTC CTG AAG GAA ATC GAG TTT CTC TCC TGG ACA GAA CCA
TTA GTG TGT AAG ACG AAG GAC TTC CTT TAG CTC AAA GAG AGG ACC TGT CTT GGT
Asn His Thr Phe Cys Phe Leu Lys Glu Ile Glu Phe Leu Ser Trp Thr Glu Pro>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

      1140         1150         1160         1170         1180
        *            *            *            *            *
TTC GGG ATA GCT TTG GCC ATA TGT GCA GTA CTG GGT GTG CTC TTG ACA GCT TTT
AAG CCC TAT CGA AAC CGG TAT ACA CGT CAT GAC CCA CAC GAG AAC TGT CGA AAA
Phe Gly Ile Ala Leu Ala Ile Cys Ala Val Leu Gly Val Leu Leu Thr Ala Phe>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

 1190         1200         1210         1220         1230         1240
   *            *            *            *            *            *
GTG ATC GGA GTC TTT GTC AGA TTC CGC AAC ACC CCA ATA GTG AAG GCC ACA AAC
CAC TAG CCT CAG AAA CAG TCT AAG GCG TTG TGG GGT TAT CAC TTC CGG TGT TTG
Val Ile Gly Val Phe Val Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

          1250         1260         1270         1280         1290
            *            *            *            *            *
CGA GAA CTG TCC TAC GTT CTC CTG TWC TCA CTT ATC TGT TGC TTC TCA AGC TCC
GCT CTT GAC AGG ATG CAA GAG GAC AWG AGT GAA TAG ACA ACG AAG AGT TCG AGG
Arg Glu Leu Ser Tyr Val Leu Leu Xxx Ser Leu Ile Cys Cys Phe Ser Ser Ser>
___a___a___a___a___a___a___a__ORF RF[2] ___a___a___a___a___a___a___a___>

   1300
     *
CTC AKC TTC ATC GG
GAG TMG AAG TAG CC
Leu Xxx Phe Ile>
____ORF RF[____>
```


FIG. 30C

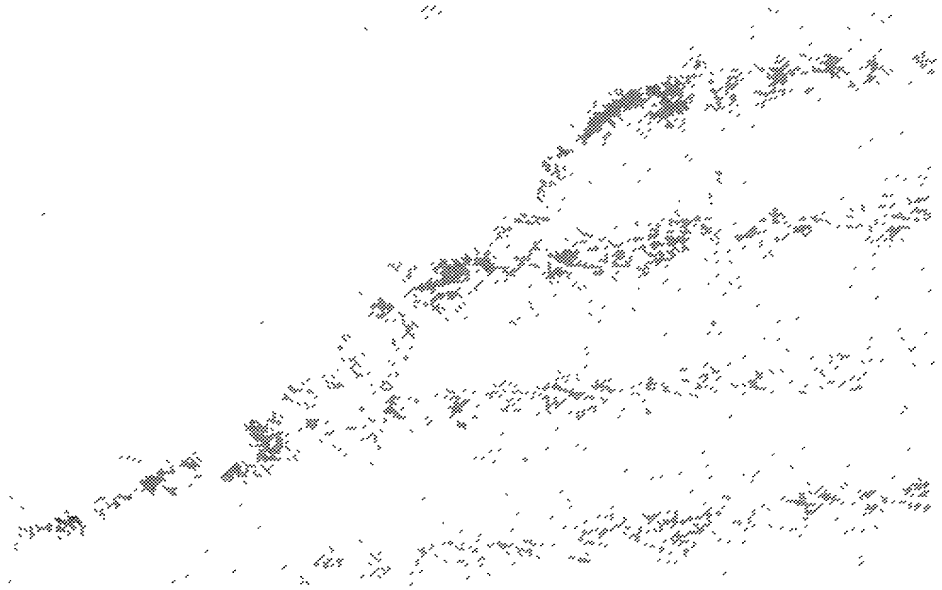

FIG. 31A

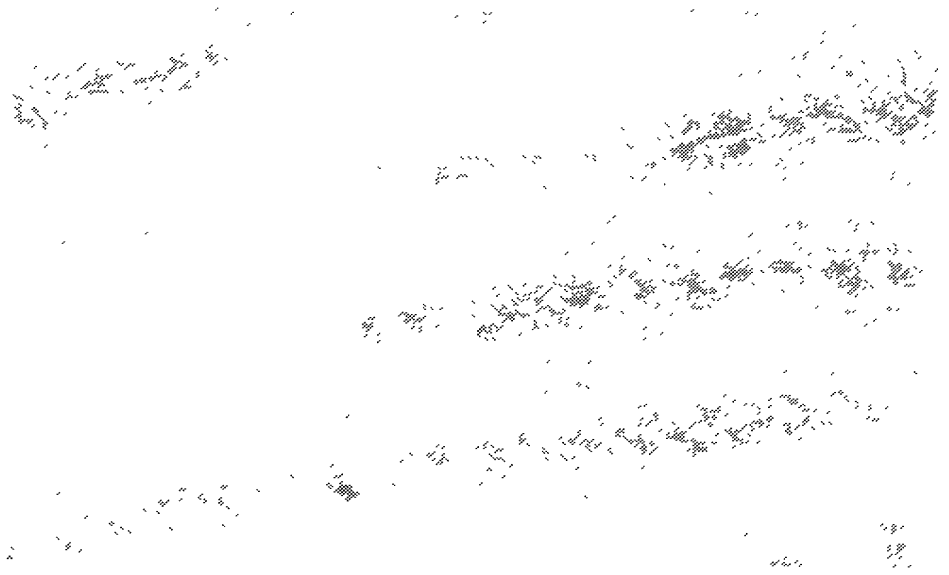

FIG. 31B